19609

SERVICE MANUAL

SANYO

COLOR VIDEO CASSETTE RECORDER

VCR 7200

Beta

SPECIFICATIONS

Video recording system	Rotary 2-head helical scan: βII/βIII switchable
TV system	NTSC
Mechanism	5-motor quartz-locked drive
Search	9x (βIII), forward and reverse
Tuner input	V_L: 2–6, V_H: A–I, 7–13, J–W U: 14–83
Power	120V AC, 60Hz, 40 watts
Dimension	420(W) x 117(H) x 360(D)mm
Weight	9.0 kg

FEATURES

- **Beta hi-fi audio stereo system with audio frequency modulation recording**
- **Front cassette loading mechanism**
- **Beta II/III recording and playback**
- **12 position soft-touch cable-TV 105-ch varactor tuner**
- **Feather touch transport control**
- **4-digit electronic tape counter with memory stop**
- **Automatic rewind at the end of the tape**
- **Maximum recording time 5 hours with L-830 cassette tape**
- **Built-in 14-day, 8-events timer with everyday and every week function**
- **Forward and reverse picture search**
- **Still image playback**
- **Simple editing**
- **IR remote control**

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THIS UNIT.

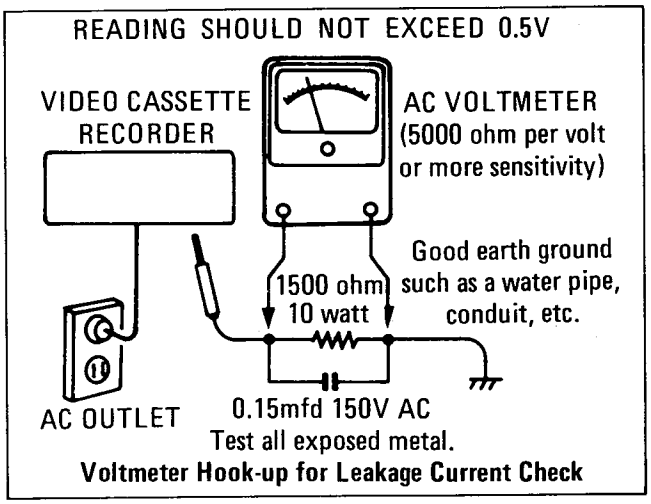
THIS SYMBOL INDICATES THAT THERE ARE IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THIS UNIT.

SAFETY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000 ohms per volt or more sensitivity. Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 mfd 150V AC capacitor between a known good earth ground (waterpipe, conduit, etc.) and all exposed metal parts of the cabinet (antennas, handle bracket, metal cabinet, screwheads, metal overlays, control shafts, etc.). Measure the AC voltage across the 1500 ohm resistor. The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.5 volts. A reading exceeding 0.5 volts indicates that a dangerous potential exists, the fault must first be located and corrected.

Repeat the above test with the VCR power plug reversed. NEVER RETURN A VCR TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.


READING SHOULD NOT EXCEED 0.5V
VIDEO CASSETTE RECORDER
AC VOLTMETER (5000 ohm per volt or more sensitivity)
Good earth ground such as a water pipe, conduit, etc.
1500 ohm 10 watt
AC OUTLET
0.15mfd 150V AC
Test all exposed metal.

Voltmeter Hook-up for Leakage Current Check

PRODUCT SAFETY NOTICE

Product safety should be considered when a component replacement is made in any area of a VCR. Components indicated by the symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designated on the parts list in this manual be used for component replacement designated by the symbol. No deviations from resistance, wattage or voltage ratings may be made for replacement items designated by the symbol.

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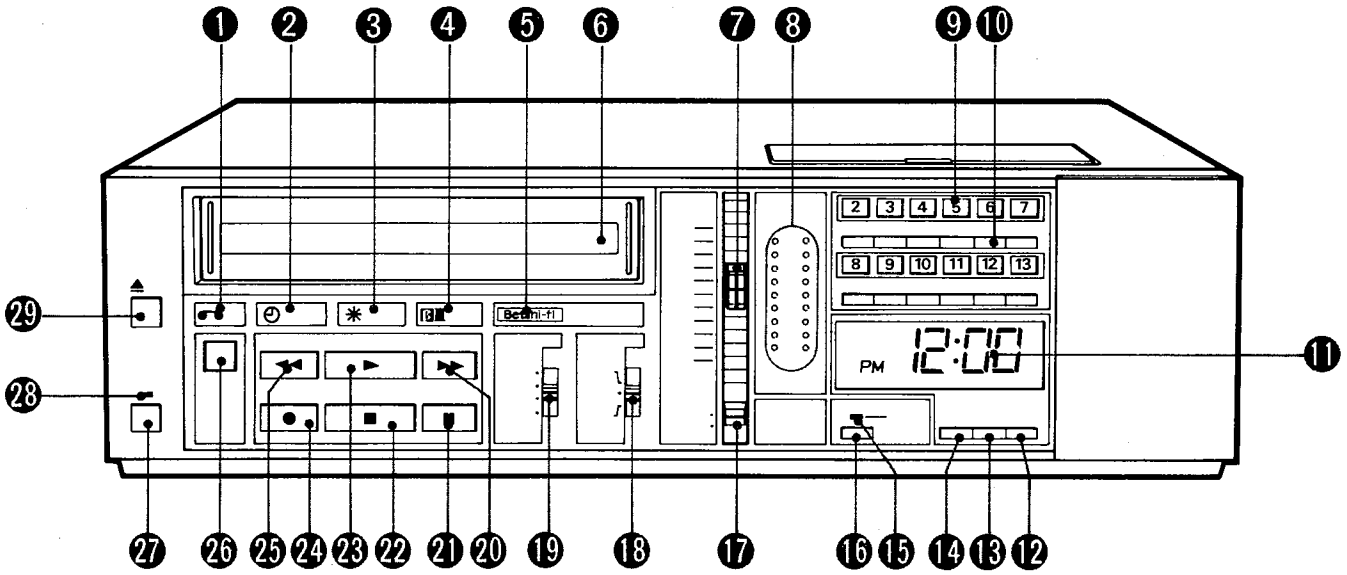
1. PART NAMES AND FUNCTIONS

Front



(1) CASSETTE IN Indicator
The CASSETTE IN Indicator illuminates when a video cassette is loaded.

(2) TIMER Indicator
The TIMER Indicator will illuminate when the TIMER Switch is in the ON position.

(3) DEW Indicator

(4) TAPE SPEED Indicator
The TAPE SPEED Indicator will illuminate when the tape speed is in the Beta III mode.

(5) AUDIO MODE Indicator
This indicator illuminates when recording in Beta hi-fi or when playing back a tape recorded in Beta hi-fi.

(6) Cassette Door
Insert a video tape cassette, the tape will be loaded automatically.

(7) REC VOLUME Controls
Adjust the audio (LEFT and RIGHT) recording levels with these controls when the AUDIO REC Level Selector is in the MAN position.

(8) Audio LEVEL Meter
The audio LEVEL Meter illuminates when recording in Beta hi-fi or when a tape recorded in Beta hi-fi is being played back.

(9) Channel Indicators
A Channel Indicator will illuminate when the corresponding Channel Button is pressed.

(10) Channel Buttons
As many as 12 television broadcast stations can be selected and programmed into the tuner's memory. Press the Channel Button corresponding to the station which is broadcasting the desired program.

(11) Digital Display
Shows CLOCK/TIMER display or TAPE COUNTER display.

(12) Counter MEMORY Button
If this button is pressed, "M" appears on the right side of the counter and the tape position of "0000" is memorized.

(13) Counter RESET Button
The readout of the tape counter will return to "0000" when this button pressed.

(14) CLOCK/COUNTER Button
The Digital Display can be used as a CLOCK/TIMER display as well as a TAPE COUNTER with memory. Press this button to select either function.

(15) VCR Indicator
Illuminates to indicate that the VCR/TV Selector is in the VCR position. The VCR Indicator is off in the TV position.

(16) VCR/TV Selector
TV: This position is used when television broadcasts are to be viewed. (The VCR Indicator is off.)
VCR: This position is used for video recording, and for playing back recorded video tapes. (Illuminates the VCR Indicator.)

(17) AUDIO REC Level Selector

MAN: Audio recording level can be adjusted manually by REC VOLUME Controls (LEFT and RIGHT).

AUTO: Audio recording level is automatically adjusted to the optimum level.

NOTE: When the REC MODE Selector is in the MONO position, the record level is automatically adjusted regardless of what position the AUDIO REC LEVEL Selector is in.

(18) REC MODE Selector

This selector is used to select the audio recording mode.

B HI-FI: Beta hi-fi sound is activated.

STEREO: Only audio recorded by means of the Beta hi-fi system. To use the unit as an audio tape deck, set to this position.

MONO: Only the normal track is recorded, and the Beta hi-fi system is not used.

NOTE: When making a recording to be played back on a model which is not Beta hi-fi, set the REC MODE Selector to MONO.

(19) AUDIO OUT Selector

Select an audio output mode during record or playback.

STEREO: The audio output signal on both the left and right channels.

LEFT: The audio output signal is on the left channel only.

RIGHT: The audio output signal is on the right channel only.

MONO: The audio signal being recorded in the normal audio track or the audio signal already recorded in the normal audio track is output. The audio signal is monaural at this time.

NOTE: Material not recorded in Beta hi-fi will be played back in MONO regardless of the selector position.

(20) FF/SEARCH Button

This button is used both for advancing the tape quickly, and forward picture search. When the button is pressed, the tape is advanced at a high speed.

If the button is pressed during playback, the picture can be seen while the tape is being advanced to the desired scene.

(21) PAUSE/STILL Button

If this button is pressed during either recording or playback, the tape movement will stop temporarily.

(22) STOP Button

When the STOP Button is pressed during any operation, the operation will be immediately stopped.

(23) PLAY Button

Load a recorded video tape cassette, press the PLAY Button, and playback will begin.

(24) REC Button

First press the REC Button, then while holding it, press the PLAY Button to start recording.

(25) REW/SEARCH Button

This button is used both for rewinding the tape, and reverse picture search.

When the button is pressed, the tape will rewind at a high speed.

If the button is pressed during playback, the picture can be seen while the tape is being rewound to the desired scene.

(26) Remote Control Detector

(27) POWER Switch

Press to turn the power on. The POWER Indicator will illuminate. To turn the unit off, press the Switch again.

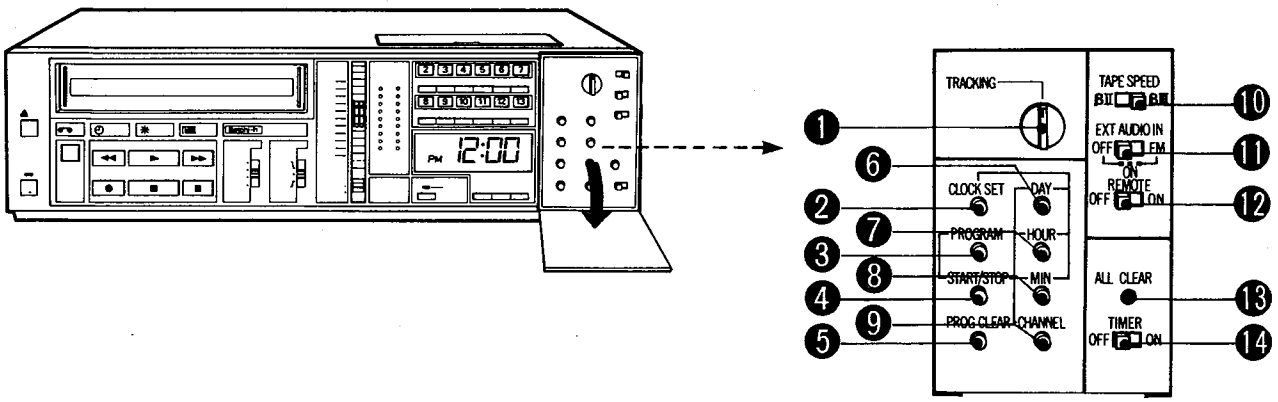
(28) POWER Indicator

The POWER Indicator will illuminate when the POWER is on.

(29) EJECT Button

Press this button to eject a cassette.

Inside the Timer Controls Compartment



(1) TRACKING Control

(2) CLOCK SET Button

Press this button when setting the clock to the current time, or when the Digital Display is to be changed from a timer program to the current time.

(3) PROGRAM Button

The VCR is equipped with memory capability for eight different programs. Press the PROGRAM Button to select from Program 1 to Program 8.

(4) START/STOP Button

This button is used to set the starting time and the stopping time of timer programming.

(5) PROGRAM CLEAR Button

Press this button to cancel a timer programming.

(6) DAY Button

This button is used to set the day of the week for both the current time readout and the timer programming.

(7) HOUR Button

This button is used to set the hour for both the current time readout and the timer programming.

(8) MIN Button

This button is used to set the minute for both the current time readout and the timer programming.

(9) CHANNEL Button

Use this button to select the TV channel to be recorded for the timer programs.

(10) TAPE SPEED Selector

Select a tape speed for recording according to your needs.

βII: Optimum recording quality; interchangeable with other Beta II format video recorder's.

βIII: Maximum recording time.

NOTE: During playback of either a Beta II or Beta III cassette, the video recorder automatically senses and sets itself to the correct playback speed regardless of the TAPE SPEED Selector setting. For information on maximum playing times of available Beta cassettes.

(11) EXT AUDIO IN Switch

OFF: This switch should normally be set in this position.

ON: For audio recording through the AUDIO IN (L and R) terminals using a tepe deck, CD player, FM tuner etc.

FM: Set to this position if the sound is noisy when an FM tuner is used to record and playback an FM stereo broadcast.

Depending upon the FM tuner used, the 19-kHz pilot signal may leak during recording, thus weakening the effect of the noise-reduction system and resulting in noisy sound.

If this occurs, setting to the "FM" position activates the MPX filter, thus cutting the 19-kHz pilot signal and making a better recording possible.

(12) REMOTE Switch

Set this switch to the ON position when using the Remote Control Unit.

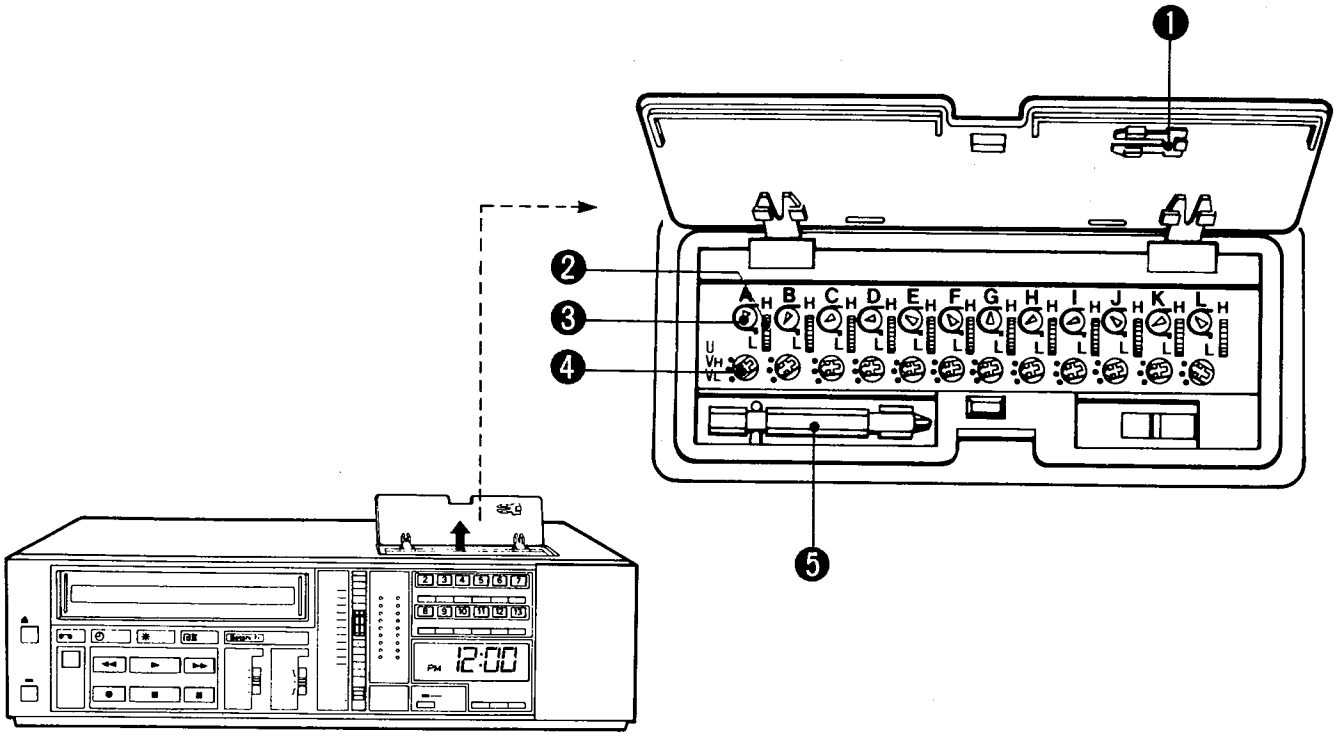
(13) ALL CLEAR Button

If this button is pressed, all settings (days, hour, minutes, etc.) will be cancelled for both the clock and timer sections. The ALL CLEAR Button should be pressed if anything unusual occurs to affect the display readout; such as an unplugged power cord or any other interruption in the power supply. If the ALL CLEAR Button is pressed the readout of the Digital Display will be set to "8888", and will blind on and off. This button is pressed to prevent accidental operation.

(14) TIMER Switch

When this switch is set to ON after the timer has been programmed, and Timer Recording is now possible.

Inside the Tuning Controls Compartment



(1) AFT Switch

Normally with this selector at ON position, the best obtainable TV reception is automatically maintained for optimum recording quality. However, under unusual conditions such as weak signal from the TV station or interference, tuning off the AFT may provide a better picture.

(2) Channel Tuning Controls

Turn the Channel Tuning Controls to tune in the best reception of the desired TV station.

(3) Channel Tuning Indicators

A Channel Tuning Indicator is provided for each of 12 Channel Tuning Controls to indicate the channel range where you are tuning.

The arrow point moves when the Channel Tuning Control is being turned.

(4) Band Selectors (U-VH-VL)

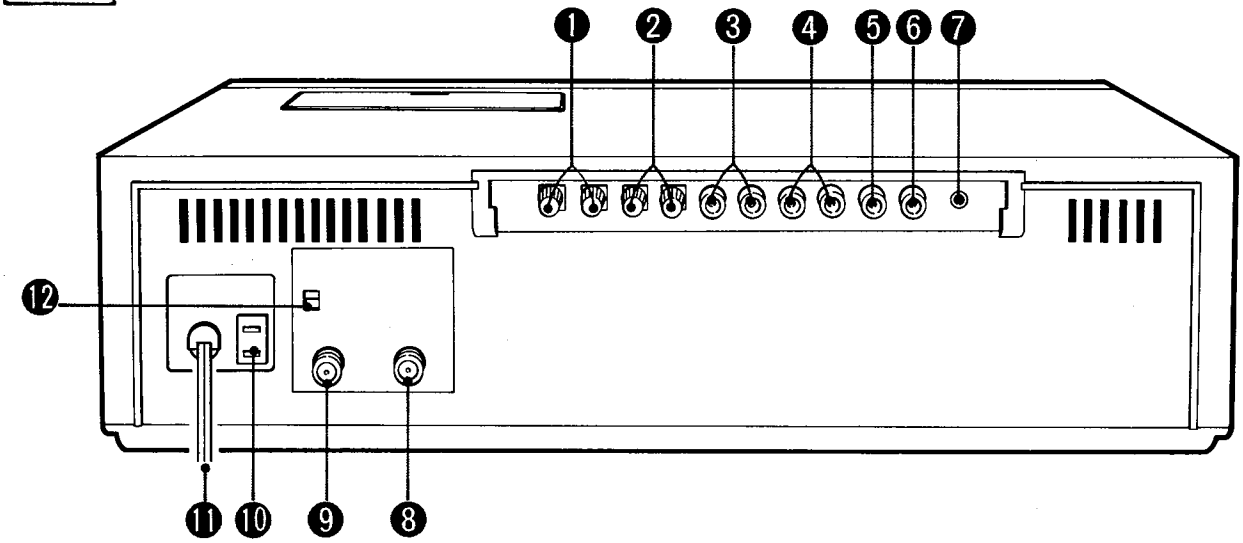
Set this selector to the channel band (U, VH or VL) of the channel you wish to preset in the tuner.

(5) Band Selector Tool

Use this tool to turn the Band Selector.

CAUTION: The Band Selector Tool should be kept out of the hands of small children as it is small and could accidently be swallowed.

Rear



(1) UHF IN Terminal
Connect the UHF antenna to this terminal.

(2) UHF OUT Terminal
Connect this terminal to the UHF antenna terminals of the television.

(3) AUDIO IN (L & R) Terminal
For connection of other audio equipment for recording.

(4) AUDIO OUT (L & R) Terminal
For connection of a monitor TV, another VCR, or audio equipment.

(5) VIDEO IN Terminal
For connection of the video output of other equipment such as another VCR for recording.

(6) VIDEO OUT Terminal
For connection of a monitor TV, another VCR etc. for monitoring or recording. The video signal during recording and playback is output from this terminal.

(7) REMOTE PAUSE Jack
The Remote Pause Control (an optional accessory) should be connected to this Jack. This push/push control permits remote operation of the VCR's PAUSE/STILL function. The REMOTE PAUSE Jack also accepts the remote pause connection from a Video Sound Camera.

(8) VHF OUT Terminal
Connect this terminal to the VHF antenna terminals of the television.

(9) VHF IN Terminal
Connect the VHF antenna to this terminal.

(10) Auxiliary AC Outlet
This is an AC electrical outlet. The power cord from a television or other equipment can be connected to this outlet. The total electrical load connected to the outlet should be within the maximum of 500 W.
The current of this electrical outlet is not controlled by either the POWER Switch of the VCR, or any of the timer programming. (In other words, the outlet is "unswitched".)

(11) Power Cord
Connect the power cord to a standard household AC electrical outlet.

(12) VCR Channel Select Switch

2. CONNECTIONS

ANTENNA/TV CONNECTION

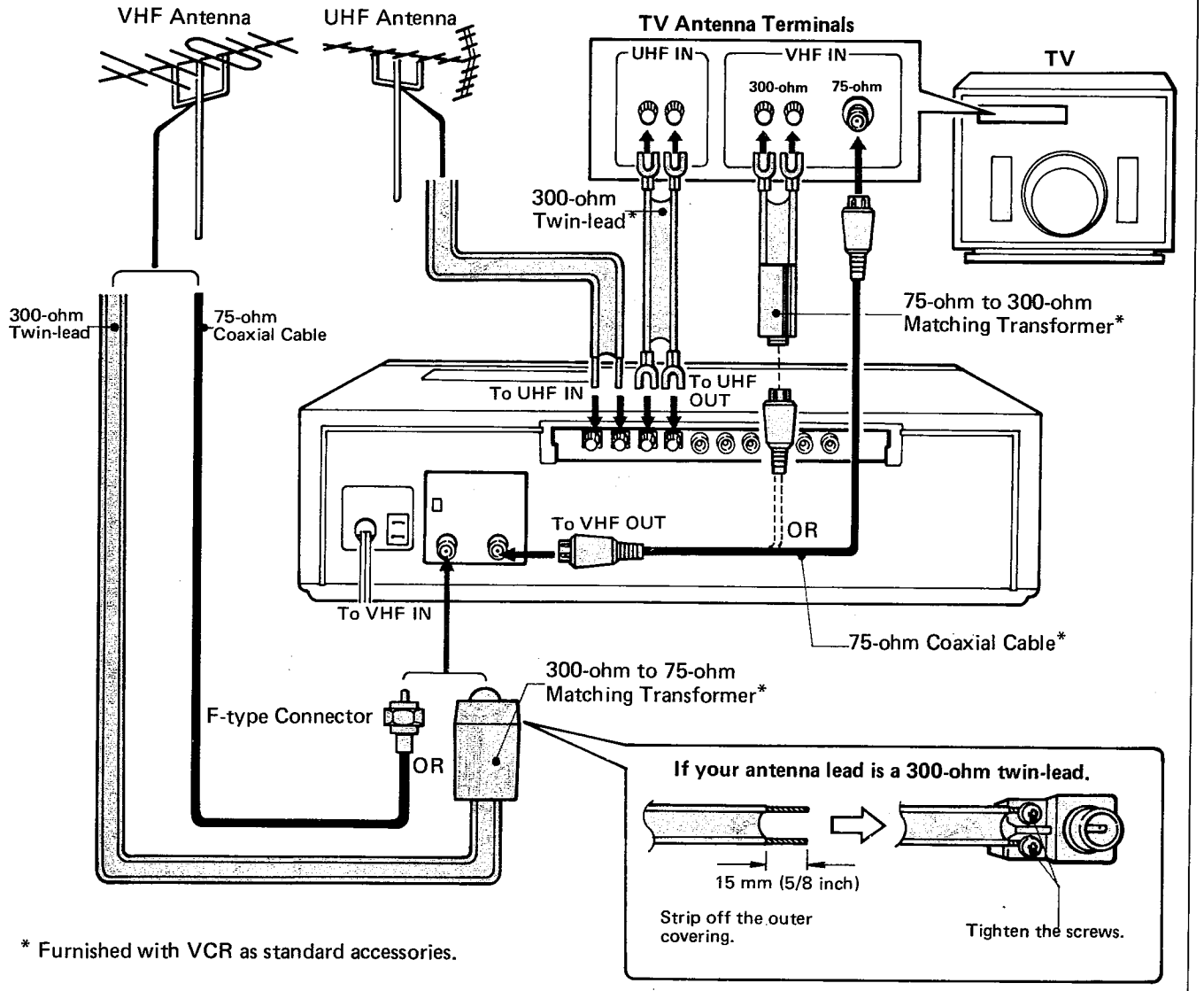


Fig. 2-1-1

3. DISASSEMBLY

1. CABINET DISASSEMBLY

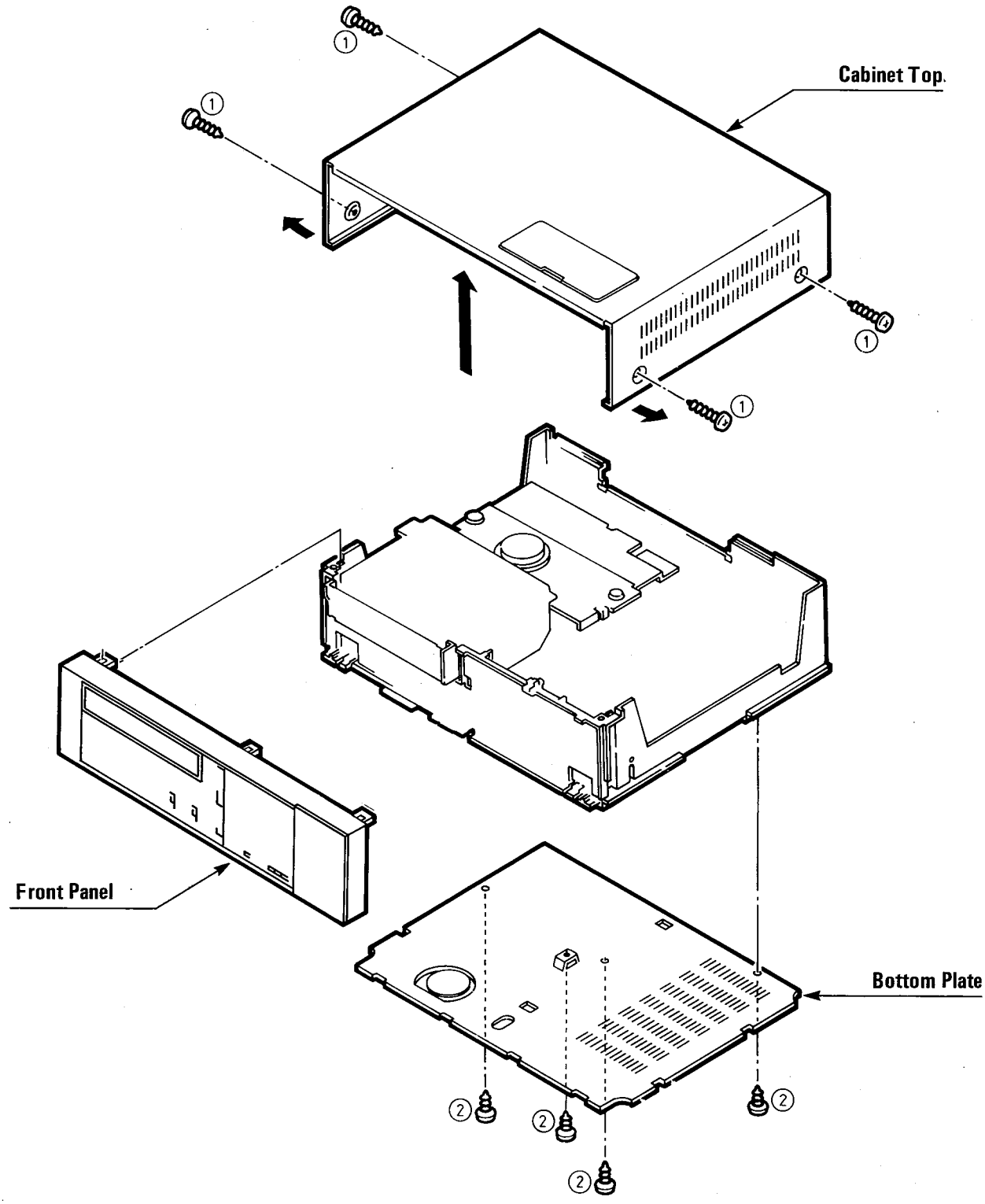


Fig. 3-1-1

2. MECHANISM DISASSEMBLY

1. MECHANISM REPAIR AND PARTS REPLACEMENT

Before replacing any of the following parts, be sure to turn off the power [set the power switch to the OFF position or pull out the power cord from the output.].

* Video head drum (video head motor)
* Video head
* Audio/control head
* Full-erase head
* Micro switches (cassette-in, loading I, loading II, erasure prevention, front loading)
* Reel motor
* Capstan motor
* Loading motor
* Front loading motor
* Tape end sensors (FWD/REW, R-SEARCH)
* DEW sensor
* Reel base sensor

(Caution)
Be especially sure that the power is off [the power switch is in the OFF position] when connecting or disconnecting the connectors of the video head drum and of the capstan motor. If one of these connectors is connected or disconnected while the power is on [the power switch is in the ON position] the internal ICs will be damaged.

2. REMOVAL OF THE MECHANISM ASSEMBLY (See Fig. 3-2-1.)

(1) Remove the six screws (a) and then detach the lead connectors before taking out the unit.

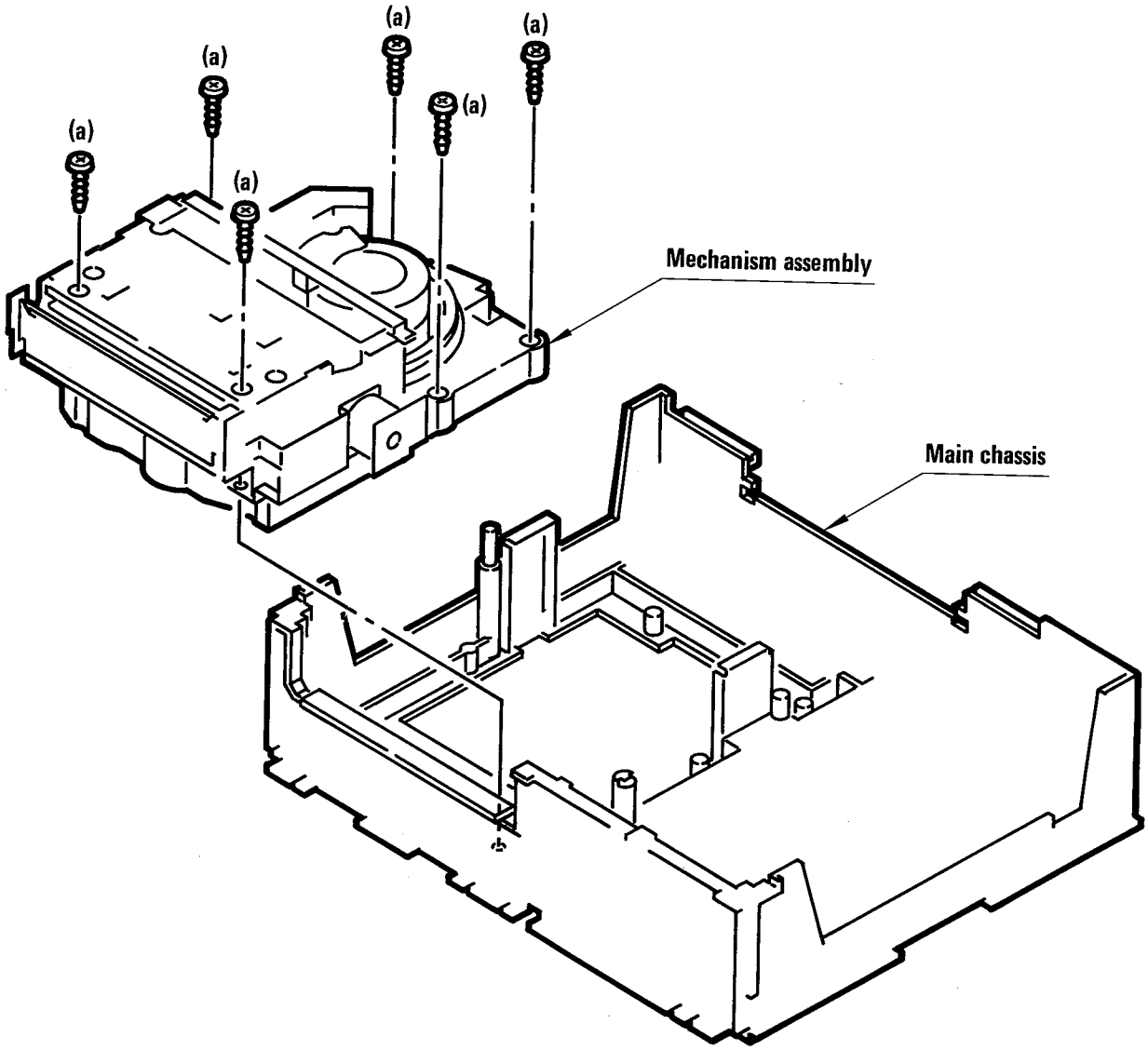
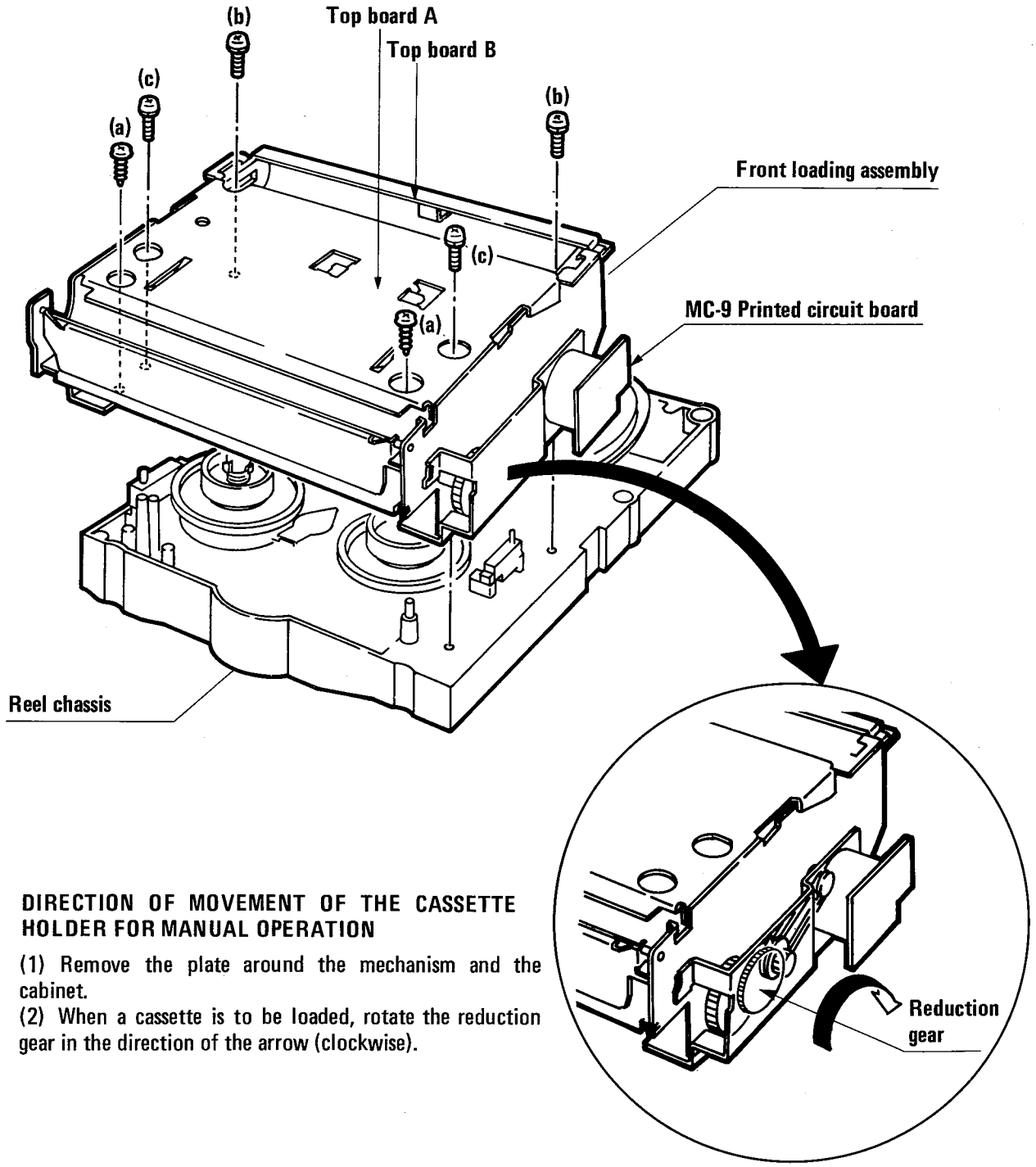


Fig. 3-2-1

3. REMOVAL OF THE FRONT LOADING MECHANISM ASSEMBLY (See Fig. 3-2-2.)

(1) Disconnect the MC-9 printed circuit board connector.
(2) Remove the two screws (a) and two screws (b) which hold the front loading mechanism and the reel chassis.
(3) Move the cassette holder manually in the direction of insertion and remove the two screws (c).
(4) Lift the front loading mechanism to remove it.

(Caution)
1. When removing the front loading mechanism assembly from the reel chassis, be sure to hold the top board A to remove it.
2. When installing the front loading mechanism to the chassis, install it so that the spring plate is held by the notched part.



DIRECTION OF MOVEMENT OF THE CASSETTE HOLDER FOR MANUAL OPERATION

(1) Remove the plate around the mechanism and the cabinet.
(2) When a cassette is to be loaded, rotate the reduction gear in the direction of the arrow (clockwise).

Fig. 3-2-2

4. SUPPLY REEL BASE (See Fig. 3-2-3)

(1) Remove the F.L. mechanism assembly.
(2) Remove the washers holding the supply reel base.
(3) Turn the ratchet brake in the direction of arrow A.
(4) While pressing the mode select slide in the direction of arrow B, remove the supply reel base and pulley.

(Caution)
Be careful not to lose the height adjustment spacer.

(5) Wipe off the old oil from the reel shaft by using a cloth moistened with alcohol, and then apply a small amount of new oil.
(6) While pressing the mode select slide in the direction of arrow B, install the supply reel base, and pulley. If a new supply reel base is being installed, adjust the reel base height. (Refer to item 5. MECHANISM ADJUSTMENT, 1. REEL BASE HEIGHT.)
(7) Mount the washers, and then install the F.L. mechanism assembly.

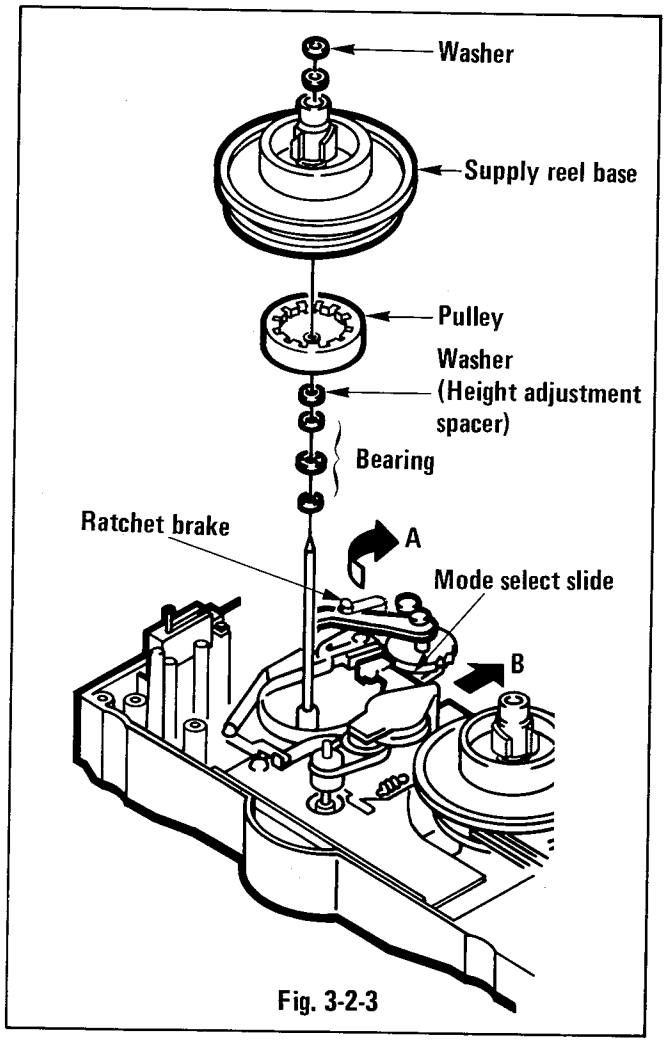


Fig. 3-2-3

5. TAKE-UP REEL BASE (See Fig. 3-2-4.)

(1) Remove the F.L. mechanism assembly.
(2) Remove the washers holding the take-up reel base.
(3) While pressing the mode select slide in the direction of arrow A and the take-up reel soft brake in the direction of arrow B, remove the take-up reel base.

(Caution)
Be careful not to lose the height adjustment spacer.

(4) Wipe off the old oil from the reel shaft by using a cloth moistened with alcohol, and then apply a small amount of new oil.
(5) While pressing the mode select slide in the direction of arrow A and the take-up reel soft brake in the direction of arrow B, install the take-up reel base. If a new take-up reel base is being installed, adjust the reel base height. (Refer to item 5. MECHANISM ADJUSTMENT, 1. REEL BASE HEIGHT.)
(6) Mount the washers, and then install the F.L. mechanism assembly.

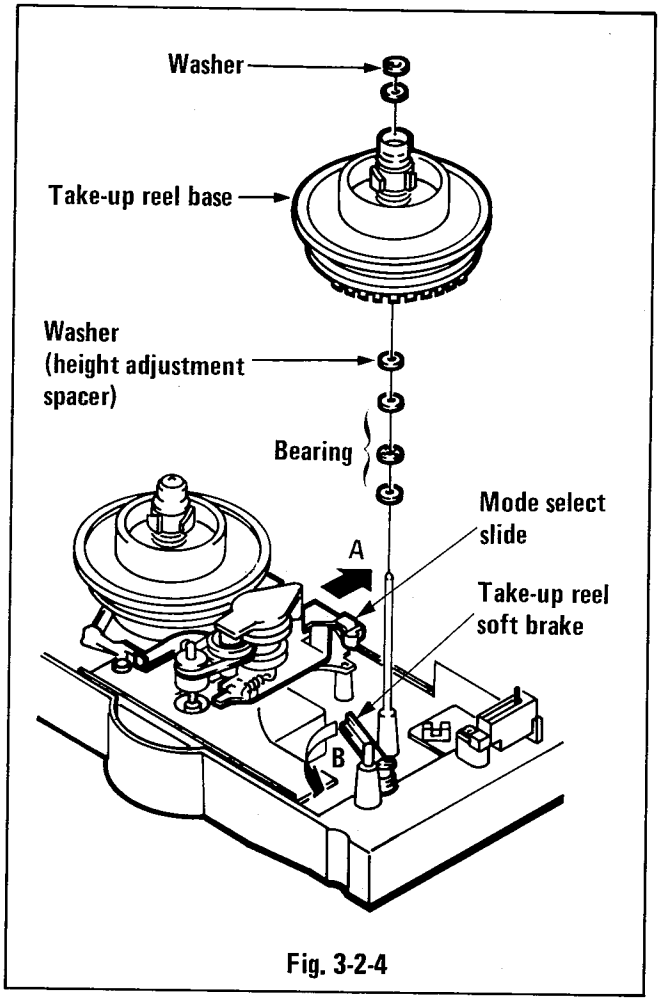


Fig. 3-2-4

6. REEL BASE DRIVE ROLLER ASSEMBLY (See Fig. 3-2-5.)

(1) Remove the F.L. mechanism assembly.
(2) Remove the supply reel base. (Refer to item 4. SUPPLY REEL BASE.)
(3) Remove the take-up reel base. (Refer to item 5. TAKE-UP REEL BASE.)
(4) Remove the screw (a) which secures the ratchet brake, and then remove the brake.
(5) Remove the reel motor belt.
(6) Remove the screws (b) which secure the reel base drive roller assembly, and then remove the assembly.
(7) Remove the E-ring, and then remove the center roller and the F FWD/REW lever. Next, remove the washers, and then remove the PLAY roller and the F FWD/REW roller.
(8) Clean the support shaft of the F FWD/REW lever, center roller, and PLAY lever, and also the shaft of the F FWD/REW roller and PLAY roller by using a cloth moistened with alcohol, and then apply a small amount of new oil.
(9) Install the PLAY roller, the F FWD/REW roller, the PLAY lever, the center roller, and the F FWD/REW lever by reversing the removal procedure.
(10) Install the reel base drive roller assembly. The prong on the end of the mode select slide should fit into the hole in the mode select lever.
(11) Install the reel motor belt.

(Caution)
Be sure that the belt is not twisted, and be careful that oil does not get on the belt.

(12) Install the ratchet brake. Part A of the ratchet brake should be in contact with the wire of the mode select lever.
(13) Install the supply reel base, the take-up reel base, and the F.L. mechanism assembly.

(Caution)
The reel base drive roller assembly should be disassembled for cleaning and lubrication only.

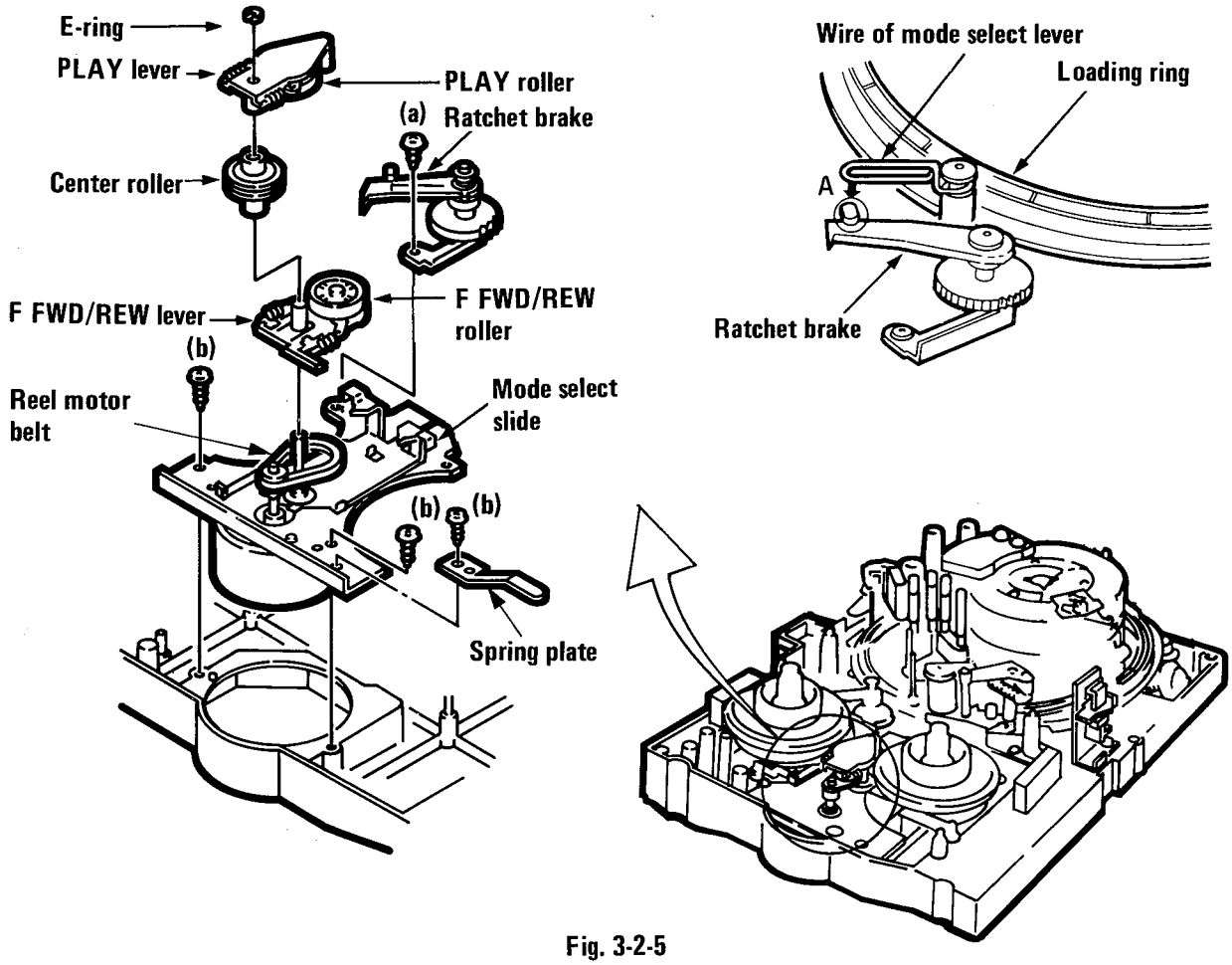


Fig. 3-2-5

7. BACK TENSION BRAKE BAND (See Fig. 3-2-6.)

(1) Remove the F.L. mechanism assembly.
(2) Remove the supply reel base. (Refer to item 4. SUPPLY REEL BASE.)
(3) Remove the reel base drive roller assembly. (Refer to item 6. REEL BASE DRIVE ROLLER ASSEMBLY.)
(4) Disconnect the brake band lever from the back tension lever.
(5) Remove the screw (a) which holds the brake band bracket.
(6) Remove the back tension brake band by passing the brake band lever under the loading ring.
(7) Install the new brake band by reversing the removal procedure.

(Caution)
Be careful not to crease or scratch the new brake band.
(8) Install the reel base drive roller assembly.
(9) Install the supply reel base.
(10) Adjust the position of the back tension lever. (Refer to item 5. MECHANISM ADJUSTMENT, 1. REEL BASE HEIGHT.)
(11) Install the F.L. mechanism assembly.

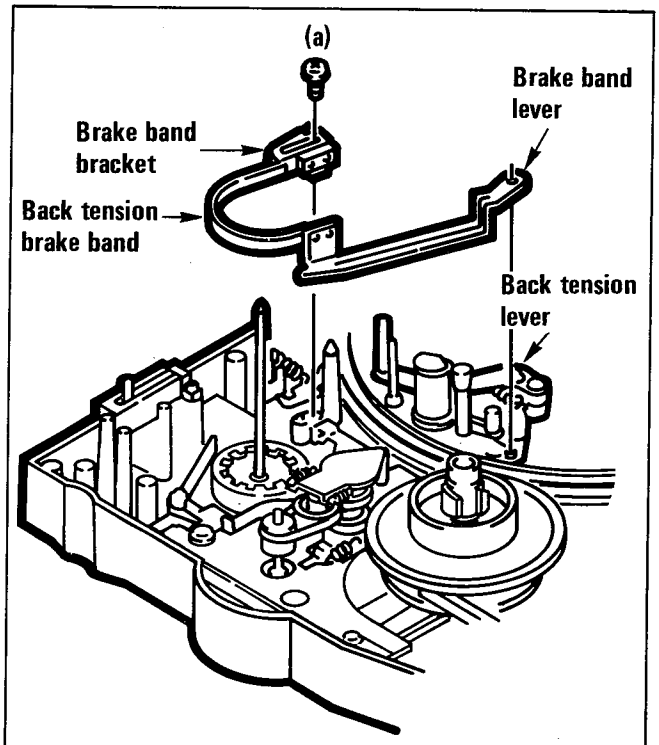


Fig. 3-2-6

8. AUDIO/CONTROL HEAD ASSEMBLY (See Fig. 3-2-7.)

(1) Remove the screws (a, b) which hold the audio/control head assembly, and then remove the soldered lead wire.
(2) Install the new audio/control head assembly.

(Caution)
Be careful to solder the lead wire at the correct position.
(3) Adjust the tape path. (Refer to item 5. MECHANISM ADJUSTMENT, 4. TAPE PATH ADJUSTMENTS.)

(Caution)
Play the alignment tape (VJ-0142 or VJ-0161) or a previously recorded tape; if the playback is normal, adjustment is not necessary.

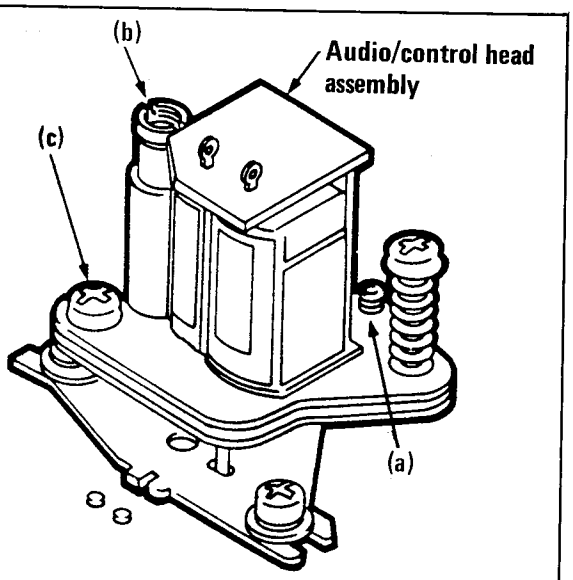


Fig. 3-2-7

9. FWD/REW sensor (See Fig. 3-2-8.)

(1) Remove the lead wire soldered to the FWD/REW sensor.
(2) While pressing part A of the FWD/REW sensor in the direction of the arrow, remove the sensor by lifting it upward.
(3) Install the new FWD/REW sensor.
(4) When doing the installation, fit the hole B of the FWD/REW sensor onto the prong C of the bracket head, and press downward.

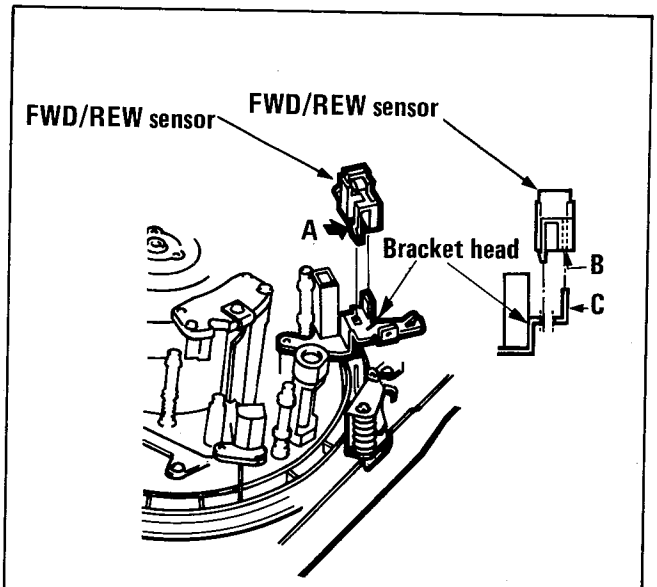


Fig. 3-2-8

10. R-SEARCH SENSOR (See Fig. 3-2-9.)

(1) Disconnect the lead wire soldered to the R-SEARCH sensor.
(2) While pressing the A part of the R-SEARCH sensor in the direction of the arrow, remove it to the side from the bracket.
(3) Replace the R-SEARCH sensor.
(4) When installing the new R-SEARCH sensor, fit the notched part C of the bracket into the hole B of the R-SEARCH sensor, and press it laterally.
(5) Solder the lead wiring.

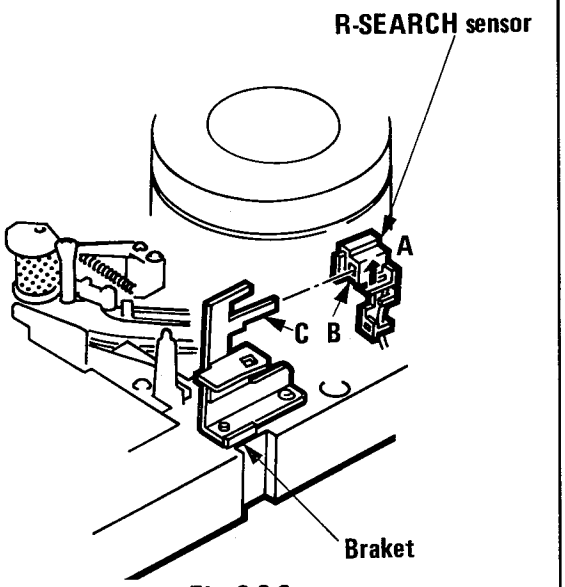


Fig. 3-2-9

11. LOADING MOTOR (See Fig. 3-2-10.)

(1) Remove the lead wire soldered to the loading motor.
(2) Remove the loading motor bracket screws (a), and then remove the loading motor assembly.
(3) Remove the loading belt.
(4) Remove the screws (b) which secure the loading motor, and then remove the motor.
(5) Loosen the set screw (c) which secures the loading motor pulley by using the hexagonal wrench (VJ-0108 ... M2.6), and then remove the pulley.
(6) Mount the loading motor pulley to the new loading motor.
(Caution)
When mounting the loading motor pulley, be sure to adjust the height.

(7) Install the loading motor by using the reverse order of the removal procedure.

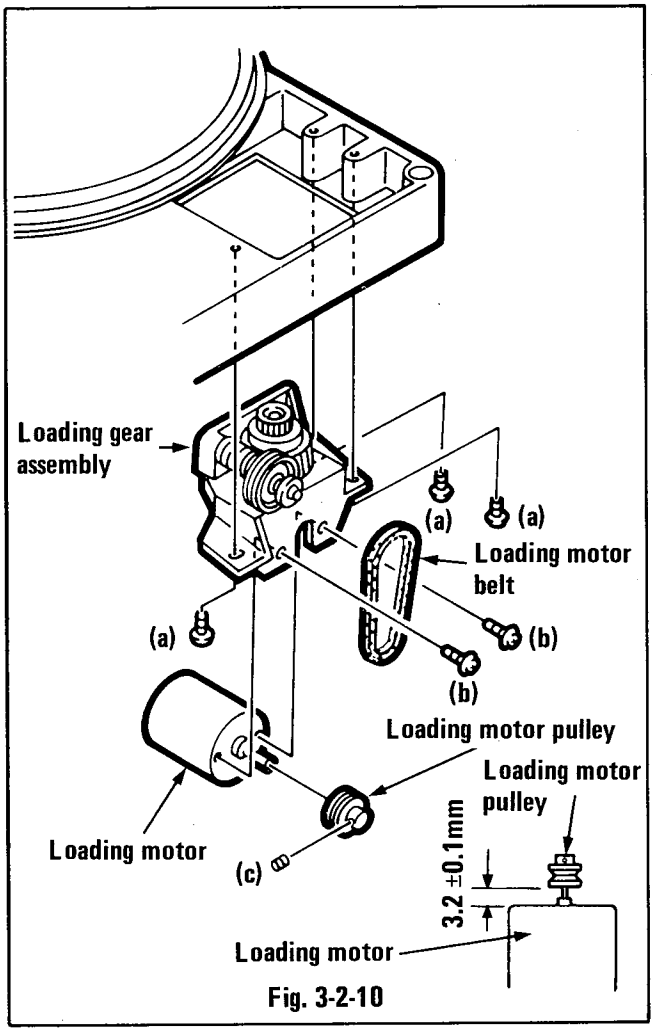


Fig. 3-2-10

12. REEL MOTOR (See Fig. 3-2-11.)

(1) Remove the F.L. mechanism assembly.
(2) Remove the lead wire which is soldered to the reel motor.
(3) Remove the reel motor belt.
(4) Remove the reel motor mounting screws (a), and then remove the motor.
(5) Loosen the set screw (b) which secures the reel motor pulley by using the hexagonal wrench (VJ-0108 ... M2.6), and then remove the pulley.
(6) Mount the reel motor pulley onto the new motor.

(Caution)
When mounting the pulley, be sure to adjust the height.

(7) Install the reel motor by using the reverse order of the removal procedure.

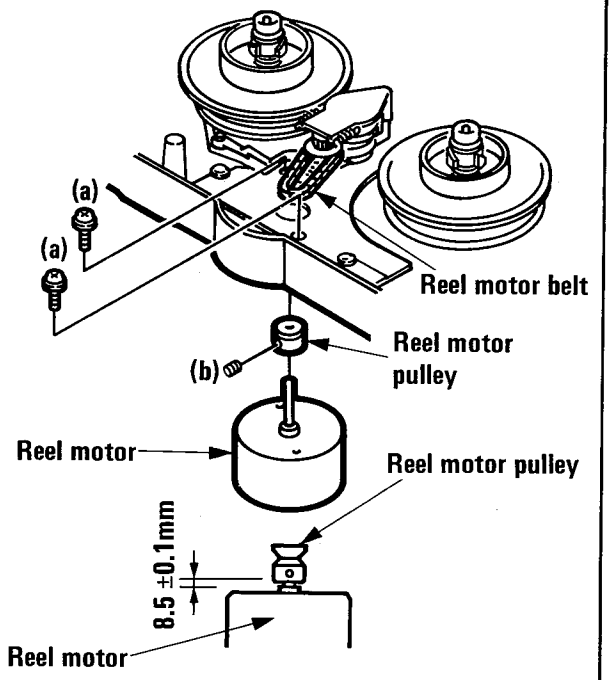


Fig. 3-2-11

13. CAPSTAN MOTOR (See Fig. 3-2-12.)

(1) Disconnect the capstan motor connector.

(Caution)
Be sure that the power is off [the power switch is in the OFF position] when connecting or disconnecting the connector.

(2) Remove the capstan motor bracket screws (a), and then remove the bracket.
(3) Remove the screws (b) securing the capstan motor, and then remove the motor.
(4) Install the new capstan motor by using the reverse order of the removal procedure.
(5) Adjust the tape path. (Refer to item 5. MECHANISM ADJUSTMENT, 4. TAPE PATH ADJUSTMENTS.)

(Caution)
Play the alignment tape (VJ-0142 or VJ-0161) or a previously recorded tape; if the playback is normal, adjustment is not necessary.

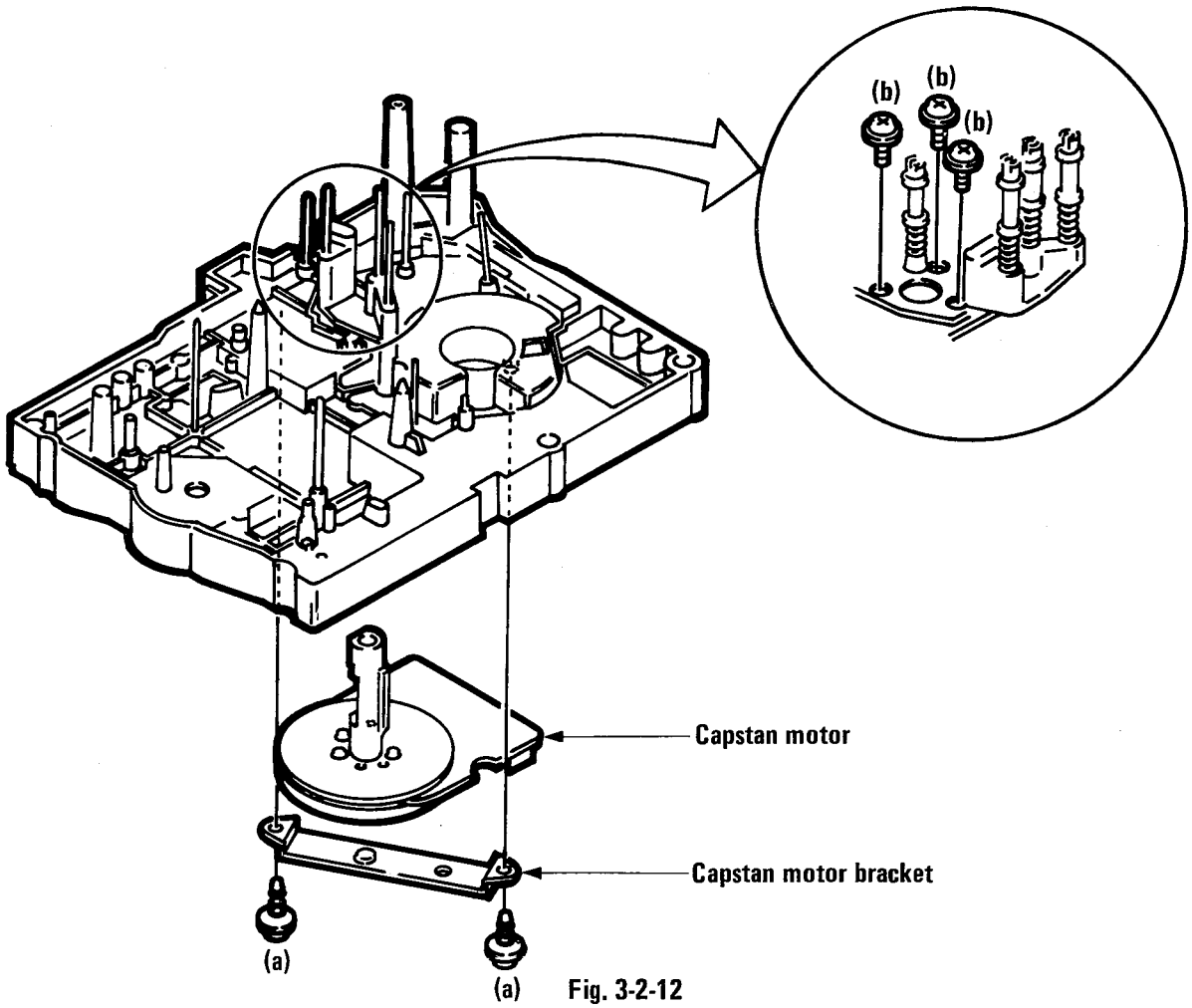


Fig. 3-2-12

14. LOADING RING (See Fig. 3-2-13.)

(1) Remove the F.L. mechanism assembly.
(2) Remove the supply reel base. (Refer to item 4. SUPPLY REEL BASE.)
(3) Remove the ratchet brake.
(4) Insert the curved tip A of the pressure spring attached to the pinch roller pressure lever into the hole B in the lever.
(5) Cut the fixer securing the lead wire to the bracket head. Remove the solder from the E-head (full-erase head) terminal, and then remove the lead wire. Remove the screw securing the bracket head, and then remove the bracket head.
(6) Remove the R-SEARCH sensor assembly. (Refer to item 10. R-SEARCH SENSOR.)

(Caution)
It is not necessary to remove the lead wire which is soldered to the R-SEARCH sensor.

(7) Disconnect the connectors, lead wires, etc.
* The video head lead wire connector (the connector which is connected to circuit board VP-1).
* The various lead wire connectors for the audio/control head, the full-erase head, etc.
* The DEW sensor (Do no break the solder on the DEW sensor.)
(8) Remove the bracket screws (a) of the loading ring support rollers, and then remove the bracket.
(9) While pressing the back tension lever in the direction of arrow C and the mode select slide in the direction of arrow D, slide the loading ring upward and remove it.

(Caution)
When pressing the back tension lever, be careful not to press the back tension guide. In addition, be careful not to scratch the video head drum, the video heads, the audio/-control head, the back tension guide, etc., and do not touch the loading guide or the pinch roller.

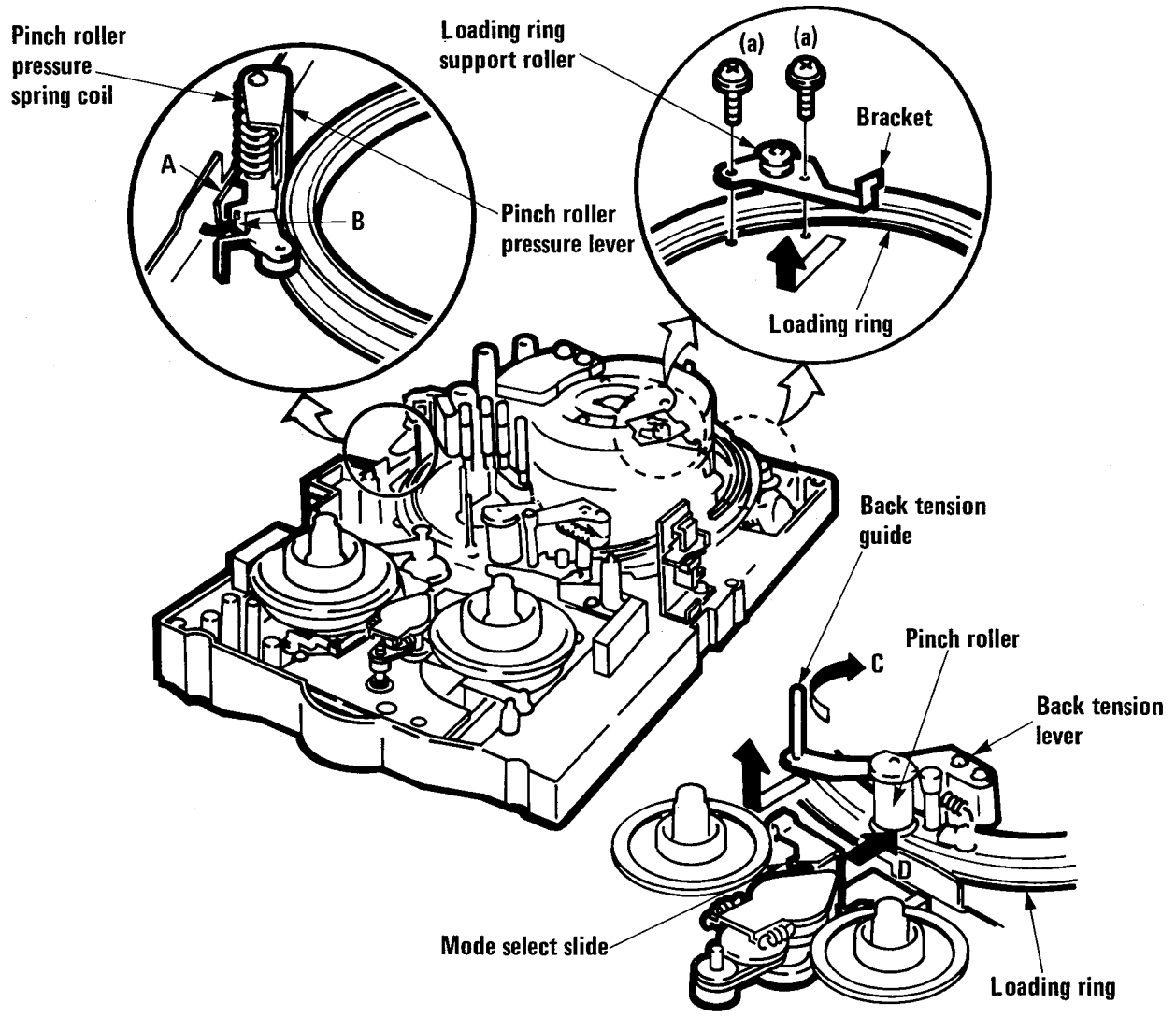


Fig. 3-2-13

[Loading ring installation] (See Fig. 3-2-14.)

(1) While pressing the back tension lever in the direction of arrow C and the mode select slide in the direction of arrow D, insert the loading ring, and fit it into the grooves of the two support rollers on the secured side.

(Caution)
When pressing the back tension lever, be careful not to press the back tension guide.

(2) Tighten the bracket screws (a) of the loading ring support rollers.

(Caution)
Be sure that the loading ring is set inside the grooves of the support rollers at all three places. Also, be sure that the loading gear and the loading ring gear are securely intermeshed.

(3) Set the loading ring to the condition at the completion of loading.

* Install the bracket head.
* Pass the fixer through the hole in the bracket head, and then bunch and secure the lead wire. Be sure that the lead wire does not hang down, and be careful not to put too much pressure on the bracket head.
* Solder the lead wire to the full-erase head terminal.

(4) Remove the curved tip A of the pinch roller pressure spring from the hole B in the pinch roller pressure lever, and connect it to the wall of the main chassis.

(5) Install the ratchet brake and other parts by reversing the order of the removal procedure.

(6) Play a previously recorded tape, and check that there is nothing wrong with the tape path.

(Caution)
When installing the loading ring, be careful not to scratch the video head drum, the video heads, the audio/control head, the back tension guide, etc.

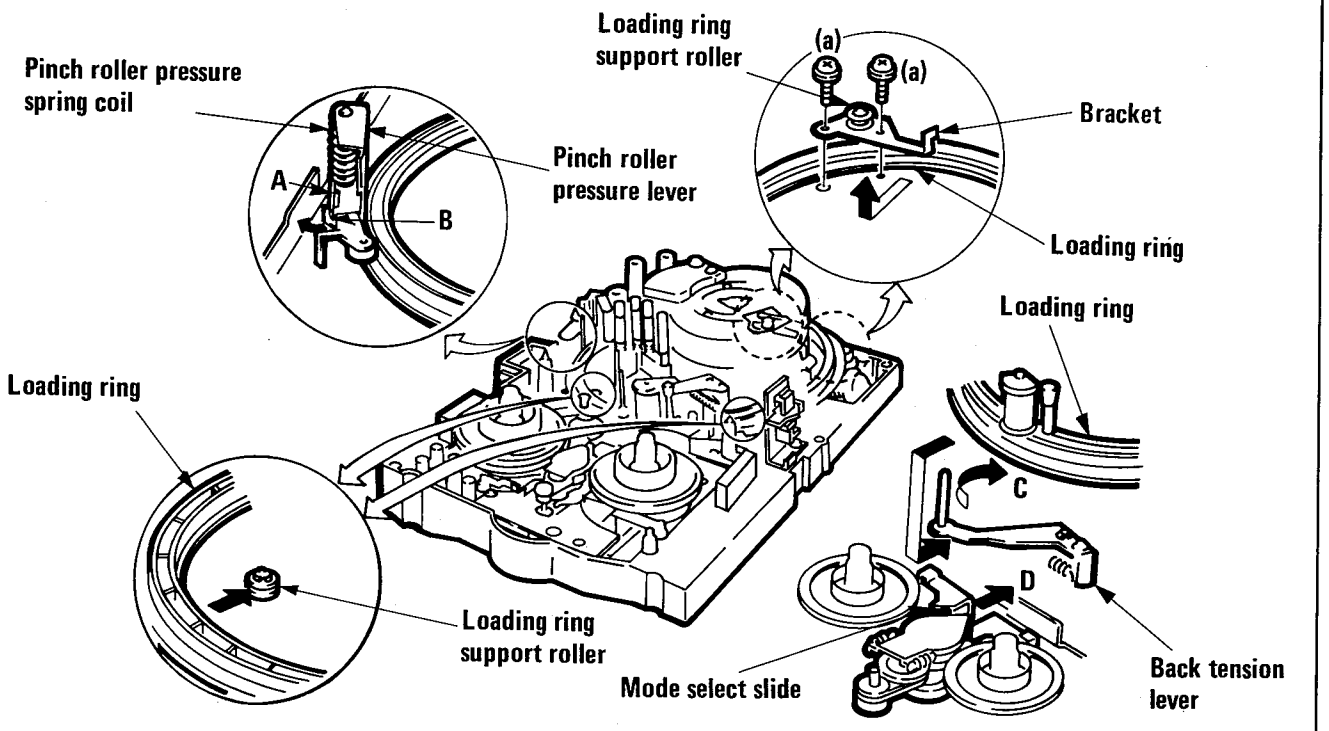


Fig. 3-2-14

15. VIDEO HEAD DISC (See Figs. 3-2-15, 3-2-16.)

(1) Break the solder connection of the PG lead wire (lead wire connected to the MC-4 circuit board in video head drum A).
(2) Remove the DEW sensor.

(Caution)
Do not break the solder connection on the DEW sensor, as its performance will be impaired if subjected to high temperatures for an extended period of time.

(3) Remove the screws (a), while lifting up video head drum A, loosen the M3 screw (b) with a Philips screwdriver and then remove video head drum A.
(4) Remove the screws (c) together with the rotary transformer brackets securing the rotary transformer.
(5) Break the solder connections of the rotary transformer lead wires (1), (2), (3), and (4), and then remove the transformer.

(Caution)
Make note of the solder connection locations for each of the rotary transformer lead wires. When removing the solder connections, do not leave the soldering iron of the video head terminals for more than five seconds. (See Fig. 3-2-16.)

(6) Remove the screws (d) which secure the video head disc, and then replace the disc.

(Caution)
Pay attention to the following points when replacing the video head disc:
* Tighten each of the screws (d) with an equal amount of torque (6 kg-cm). Do not overtighten them.
* Do not remove the spacer underneath the video head disc. Install the new video head disc right on to the old spacer. (It is possible that there is no spacer.)
* Solder the lead wires in their original positions, and position them so that they follow along the video head disc and do not come in contact with drum A.

(7) Assemble the remaining parts in the reverse order of removal.

(Caution)
The M3 screw (b) determines the position of drum A, and so tighten it with a torque of 1 kg or less.

(8) Play the alignment tape (VJ-0142 or VJ-0161) or a previously recorded tape, and if there are any abnormalities in the picture, adjust the tracking. If a normal picture still cannot be obtained, adjust the tape path. (Refer to item 5. MECHANISM ADJUSTMENT, 4. TAPE PATH ADJUSTMENTS.)
(9) If a slipping noise is heard from the video head drum when the tape is played back, it is probably because the video head drum is not installed properly; loosen the screws (a) and the M3 screw (b) again and adjust drum A.

(Caution)
If the slipping noise is heard after the adjustment is made, it indicates that the cause is a different thickness of the video head disc: turn the gap adjusting screws (e) 30° – 40° counter clockwise from the point at which the slipping noise is heard. (Tighten the gap adjusting screws (e) uniformly.)

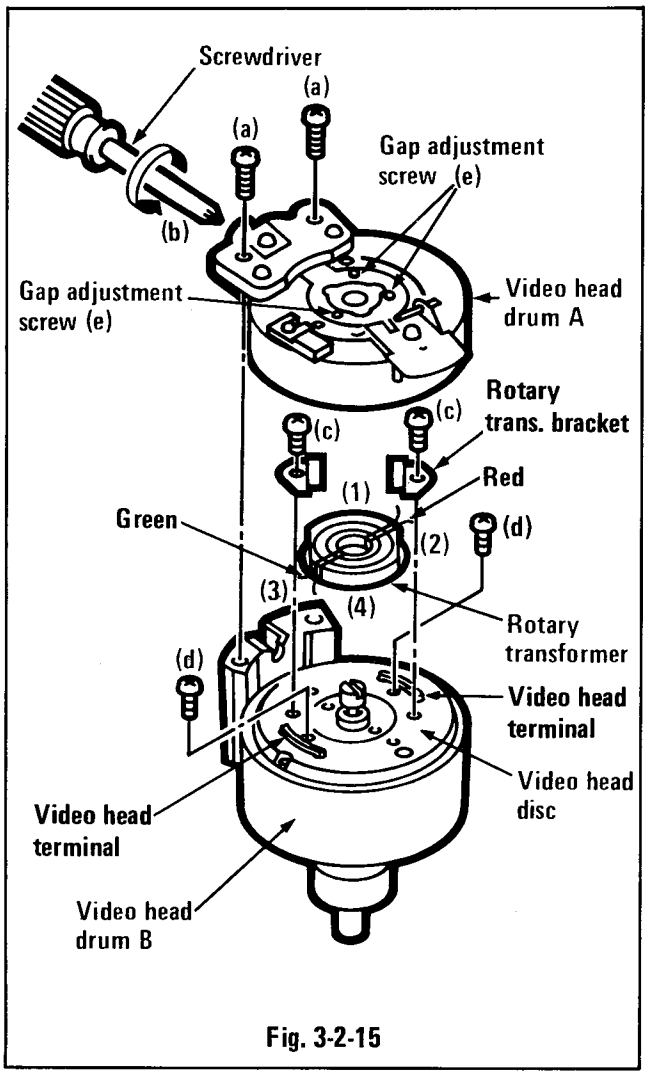


Fig. 3-2-15

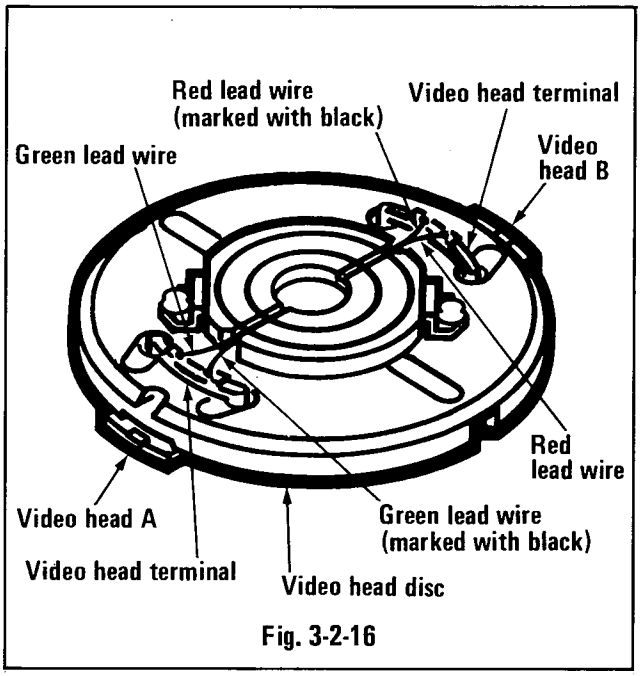


Fig. 3-2-16

16. FRONT LOADING ASSEMBLY (See Fig. 3-2-17.)

(1) Remove the F.L. mechanism assembly.
(2) Remove the three screws (a) and the gear base, and replace the belt.
(3) After the belt is replaced, assembly is the reverse order of disassembly.

(Caution)

1. When removing the gear base, be careful that the main shaft doesn't slip out in the direction of the arrow.
2. If the main-shaft does happen to slip out, move the cassette holder to the ejection-completion position, and then position the gear so that the dowel of the pinion is located as shown in Fig. 3-2-18.

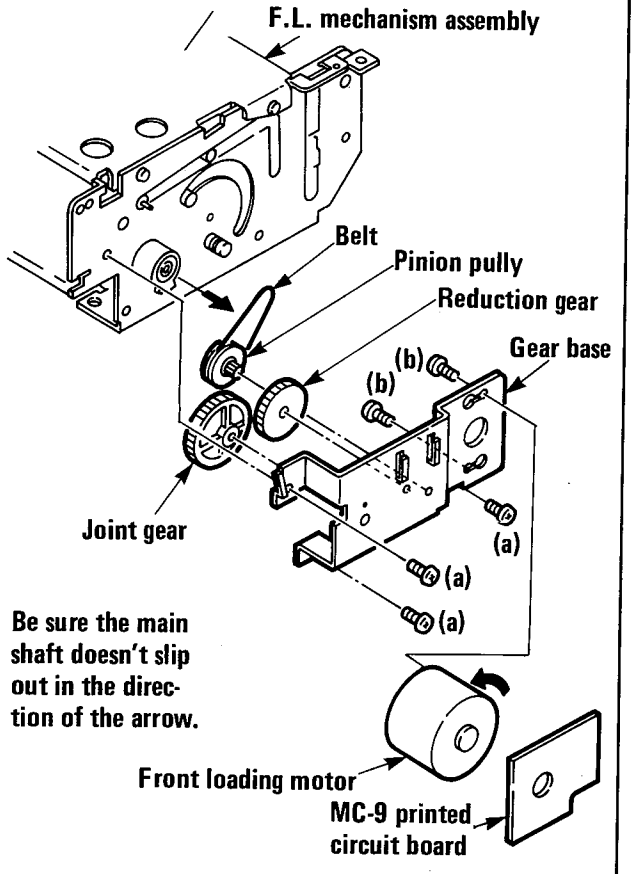
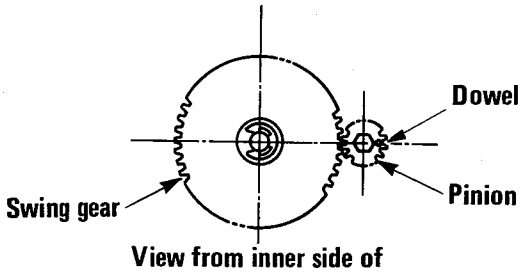


Fig. 3-2-17



View from inner side of front loading mechanism

Fig. 3-2-18

17. FRONT LOADING CASSETTE MOTOR (See Fig. 3-2-19.)

(1) Remove the front loading mechanism assembly.
(2) Slightly loosen the two screws (b), and then remove the front loading cassette motor by turning it slightly in the direction of the arrow.
(3) Disconnect the MC-9 printed circuit board from the solder terminals of the front loading cassette motor.
(4) By using a hexagonal wrench (VJ-0108 ... M2.6), loosen, and then remove, the screw holding the front loading cassette motor pulley.
(5) Remove the two screws (b) holding the motor.
(6) Replace the front loading cassette motor, and install it in the reverse order of removal.

(Caution)
When installing the front loading motor pulley, be sure to make the height adjustment shown in Fig. 3-2-19.

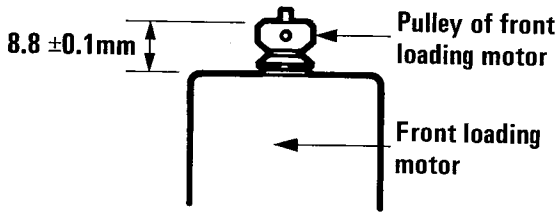


Fig. 3-2-19

3. CIRCUIT BOARD DISASSEMBLY

1. CIRCUIT BOARD LOCATIONS

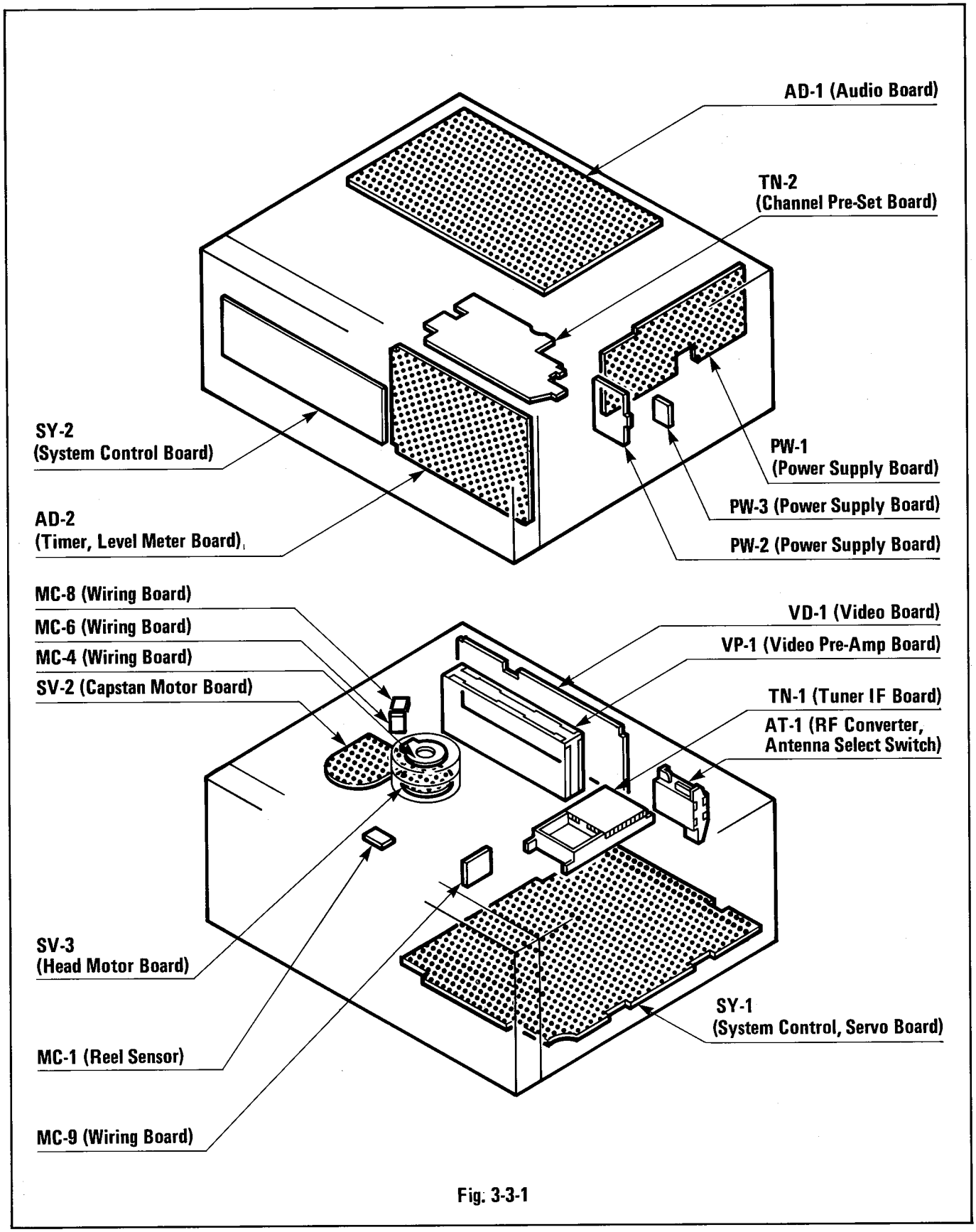


Fig. 3-3-1

1. REMOVAL OF THE MAIN CIRCUIT BOARD

1. AUDIO BOARD (AD-1)

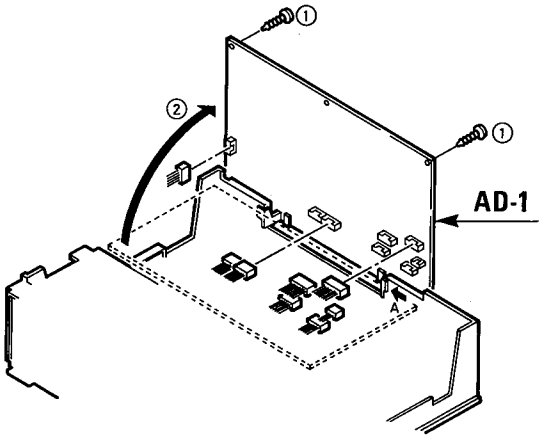


Fig. 3-3-2

2. VIDEO PRE-AMP BOARD (VP-1)

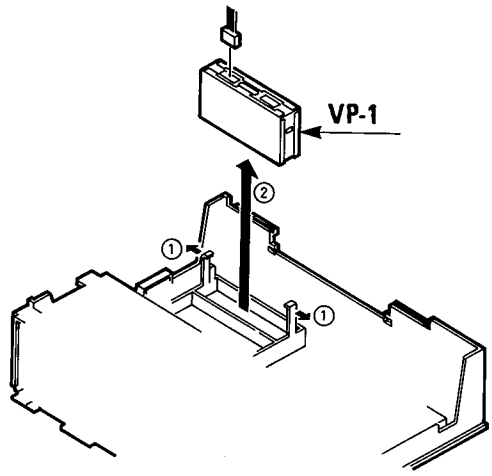


Fig. 3-3-3

3. VIDEO BOARD (VD-1)

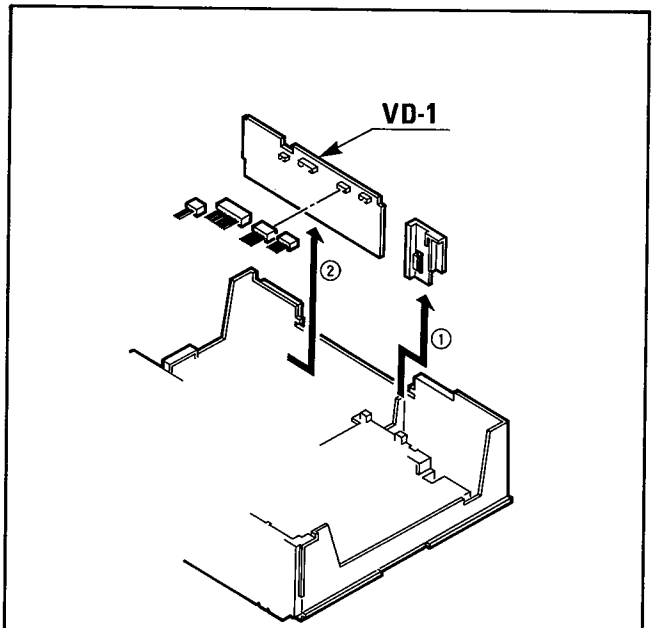


Fig. 3-3-4

4. SYSTEM CONTROL BOARD (SY-2)

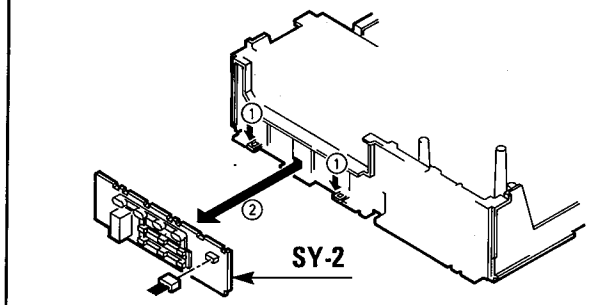


Fig. 3-3-5

5. TIMER AND LEVEL METER BOARD (AD-2), CHANNEL PRE-SET BOARD (TN-2)

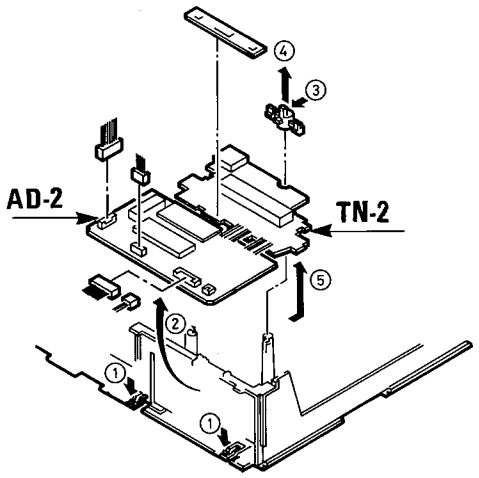


Fig. 3-3-6

6. TUNER AND I.F. BOARD (TN-1), ANTENNA SELECT SWITCH AND RF CONVERTER (AT-1)

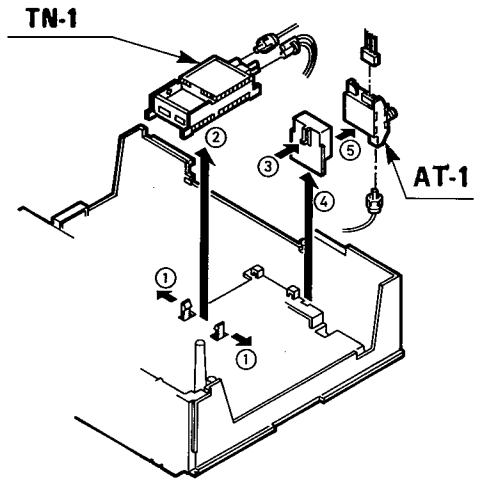


Fig. 3-3-7

7. POWER SUPPLY BOARD (PW-1, PW-2, PW-3)

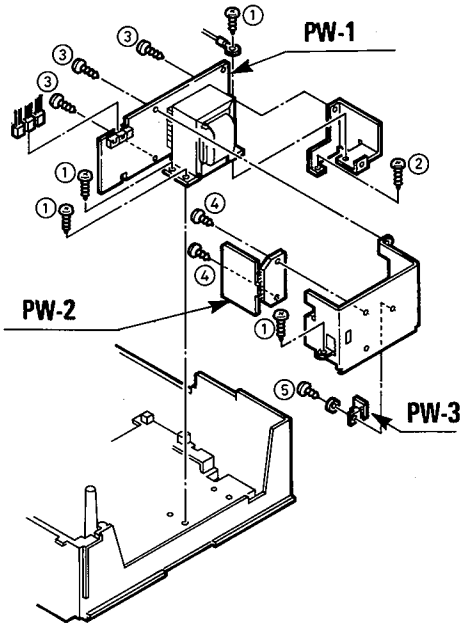


Fig. 3-3-8

8. SYSTEM CONTROL AND SERVO BOARD (SY-1)

(Note)
To open the SY-1 printed circuit board, use a flat-tip screwdriver to move the hook parts in the directions of arrows A and B.

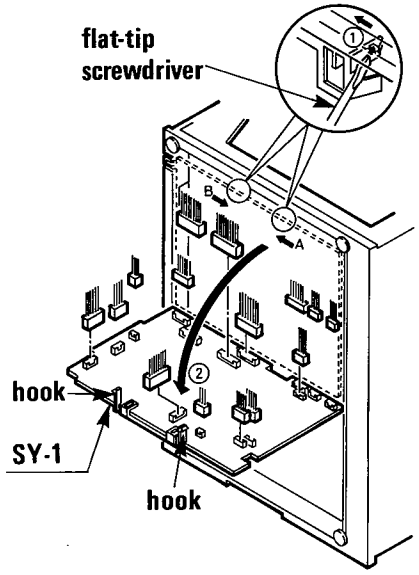


Fig. 3-3-9

4. STANDARD MAINTENANCE

1. MAINTENANCE TIMETABLE

Parts \ Time (Hours)	500	1000	1500	2000	2500	3000	3500	4000	5000
Video head	△	△	△	△	△	△	△	△	△
Audio/control head Audio erase head	△	△	△	△	△	△	△	△	△
Pinch roller, capstan	△	△	△	△	△	△	△	△	△
Full erase head	△	△	△	△	△	△	△	△	△
Supply reel base	△	△	△	△▲	△	△	△	△▲	△
Take-up reel base	△	△	△	△▲	△	△	△	△▲	△

△ Cleaning ..... methyl alcohol
▲ Lubrication ..... specified lubricant

Table 4-1-1

2. CLEANING

1. VIDEO HEAD (See Fig. 4-2-1.)

(1) Turn off the power. [Set the power switch to the OFF position.]
(2) Move the video head drum to a position at which the video heads are easy to clean.
(3) Wipe each head several times with the deerskin part of the head cleaning stick. If the heads are extremely dirty, wipe more times.

(Caution)
* When pressing a finger on the head cleaning stick to clean the heads, do not press too hard.
* Do not move the head cleaning stick up and down against the video heads; doing so will damage the heads.

2. TAPE PATH

Clean the surfaces of the tape guides and the drum tape path by using a soft cloth or cleaning stick moistened with an alcohol.

(Caution)
When cleaning the drum surfaces, be careful not to contact the video heads.

3. PINCH ROLLER, CAPSTAN

(1) Using a soft cloth moistened with alcohol, clean the surfaces of the pinch roller and capstan.
(2) If there are scratches on the pinch roller, remove the E-ring and replace the pinch roller lever assembly.

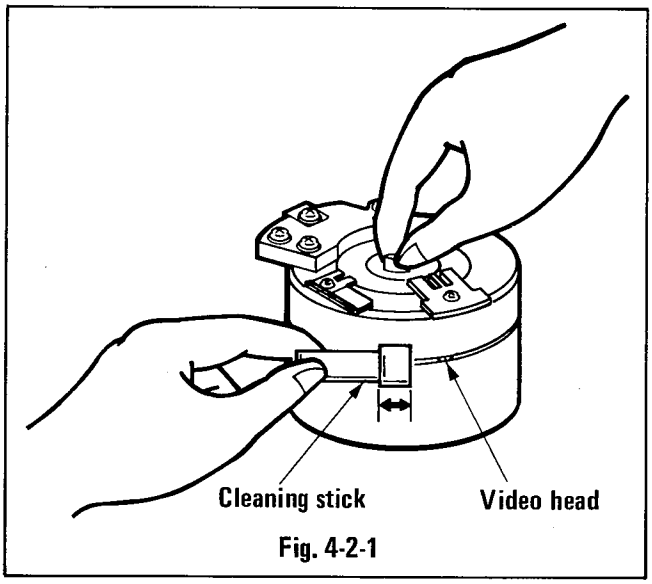


Fig. 4-2-1

4. CLEANING THE AUDIO/CONTROL HEAD AND FULL-ERASE HEAD (See Figs. 4-2-2, 4-2-3.)

Apply alcohol to the cleaning stick, and move the cleaning stick against the heads in the direction of the head gap.

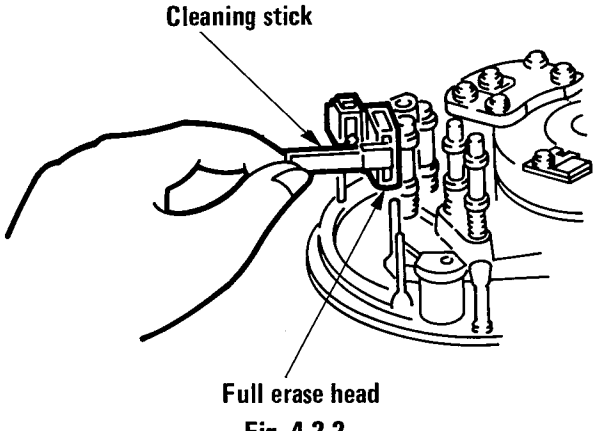


Fig. 4-2-2

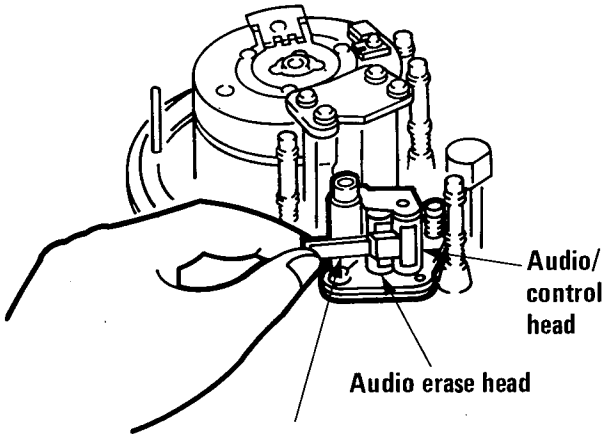


Fig. 4-2-3

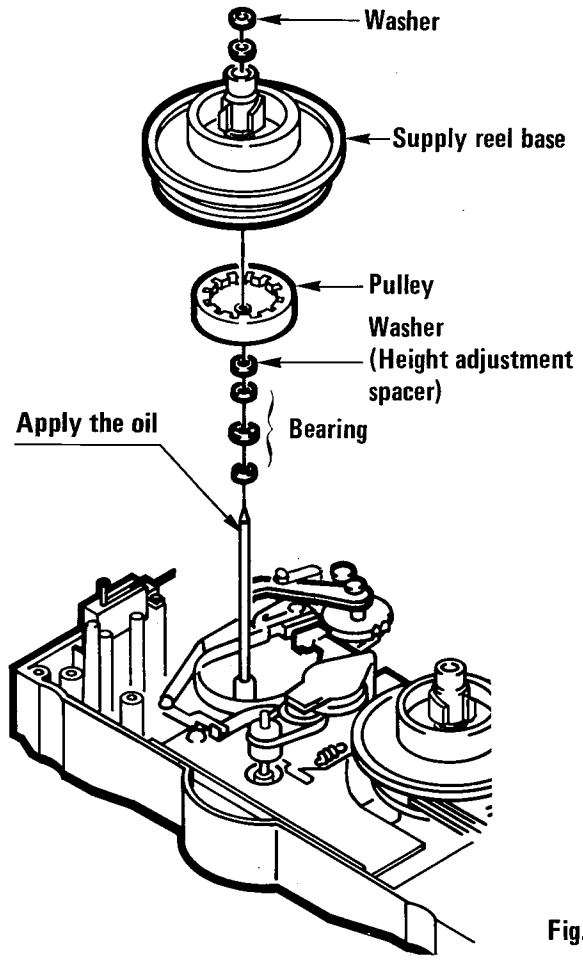
3. LUBRICATION

1. LUBRICATING PARTS

(1) Supply reel
(2) Take-up reel

2. LUBRICATING PROCEDURE

(1) Remove the washers holding the supply and take-up reel base.
(2) Wipe off the old oil from the reel shaft by using a cloth moistened with alcohol, and then apply a small amount of new oil.



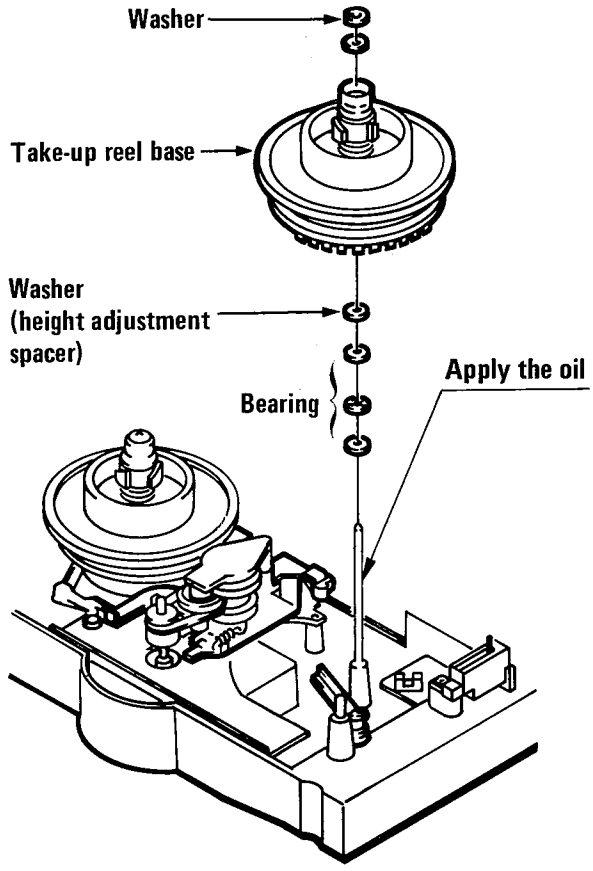


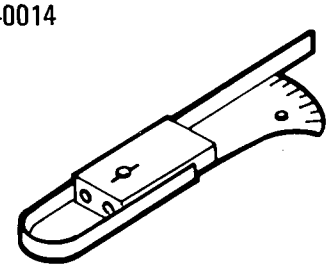
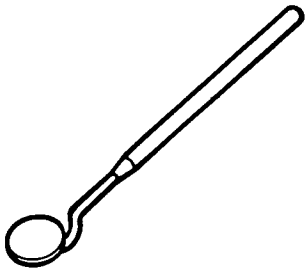
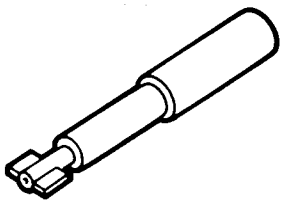
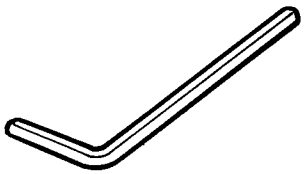
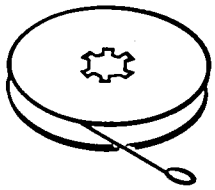
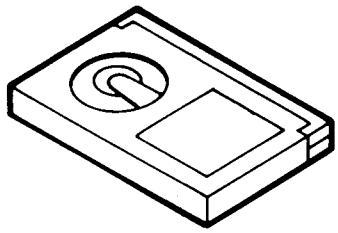
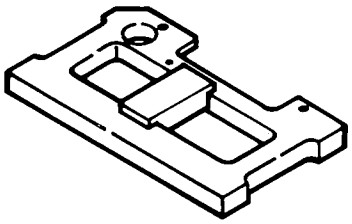
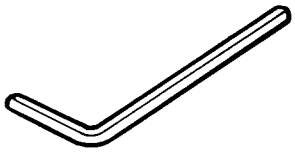
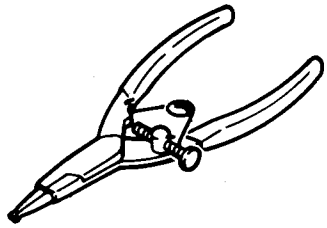
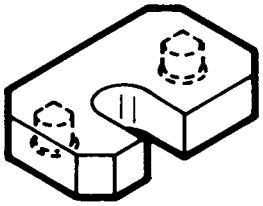
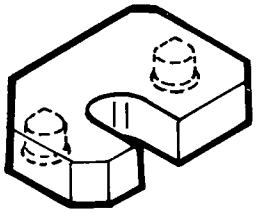
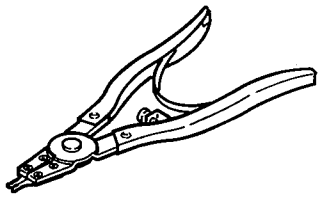
Fig. 4-3-1

5. MECHANISM ADJUSTMENT

1. JIGS AND TOOLS FOR ADJUSTMENT

No.	Names	Jig. No.	Remarks
1	Spring tension gauge (100 gram)	VJ-0012	Measurement for FWD (PLAY), R-SEARCH take-up torque
2	Spring tension gauge (500 gram)	VJ-0014	Measurement for F FWD, REW take-up torque
3	Inspection mirror	VJ-0015	Tape path alignment
4	Eccentric screwdriver	VJ-0017	Tape path alignment
5	Hexagonal wrench (M3)	VJ-0022	Adjustment of back tension guide
6	Tension gauge for reel	VJ-0038	Measurement for all winding torque
7	Alignment tape	VJ-0142 or VJ-0161	Tape path alignment
8	Cassette stand plate gauge	VJ-0105	Adjustment of reel height
9	Hexagonal wrench (M2.6)	VJ-0108	Installation of reel motor pulley
10	Grip ring pincher	VJ-0109	For attaching/detaching grip ring (more than 4mm)
11	Position adjustment gauge	VJ-0120	Adjustment of back tension guide
12	Checker adjustment gauge	VJ-0121	Adjustment back tension guide
13	Grip ring pincher (small)	VJ-0128	For attaching/detaching grip ring (3mm only)
14	Grip ring pincher head	VJ-0128-1	Spare head of grip ring pincher VJ-0128

Table 5-1-1

VJ-0012 VJ-0014  **No. 1, No. 2**	VJ-0015  **No. 3**	VJ-0017  **No. 4**
VJ-0022  **No. 5**	VJ-0038  **No. 6**	VJ-0142 or VJ-0161  **No. 7**
VJ-0105  **No. 8**	VJ-0108  **No. 9**	VJ-0109  **No. 10**
VJ-0120  **No. 11**	VJ-0121  **No. 12**	VJ-0128  **No. 13**
VJ-0128-1 **No. 14**		

2. PREPARATIONS FOR ADJUSTMENT

1. DIRECTION OF MOVEMENT OF THE CASSETTE HOLDER FOR MANUAL OPERATION

(1) Remove the plate around the mechanism and the cabinet.
(2) When a cassette is to be loaded, rotate the reduction gear in the direction of the arrow (clockwise). (Fig. 5-2-1)
(3) When a cassette is to be ejected, rotate the reduction gear in the direction of arrow (counter clockwise). (Fig. 5-2-2)

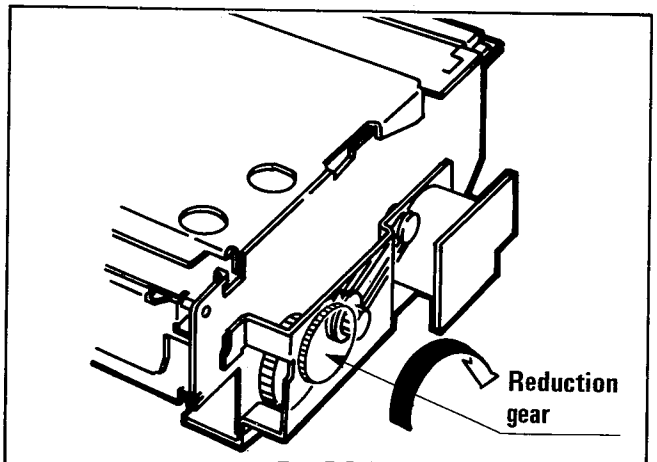


Fig. 5-2-1

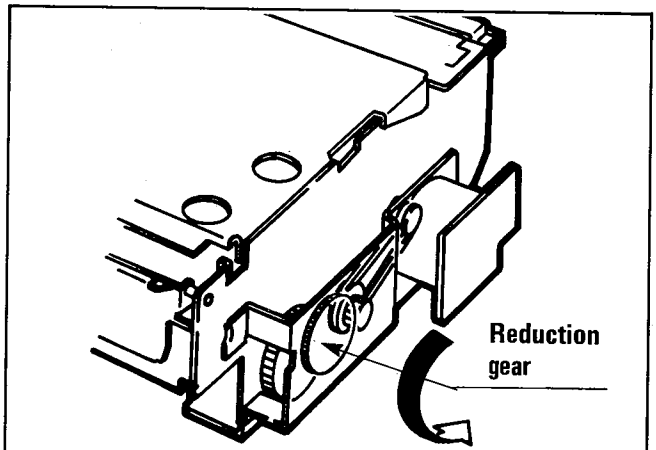


Fig. 5-2-2

2. OPERATION OF THE VCR ONCE THE FRONT LOADING MECHANISM ASSEMBLY HAS BEEN REMOVED (See Figs. 5-2-3, 5-2-4.)

(1) Turn on the power. [Set the power switch to the ON position]
(2) Press the cassette switch in the direction of the arrow. (When the cassette switch is not continuously pressed it will not function.) Perform adjustment for tape path with the F.L. mechanism assembly attached.
(3) The mode will change in accordance with the operation button which is pressed.
(4) In both the REW and R-SEARCH modes, the safety mechanism will function if the take-up reel base does not rotate, therefore, manually rotate the take-up reel base clockwise (direction A). (See Fig. 5-2-4)

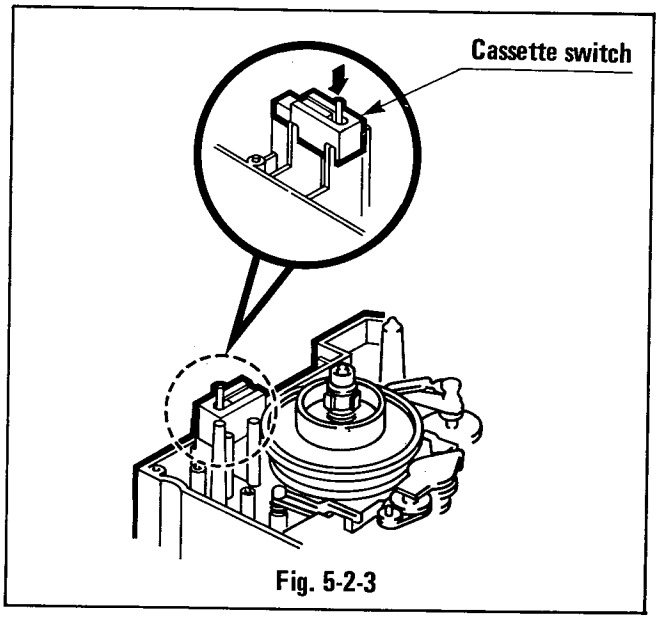


Fig. 5-2-3

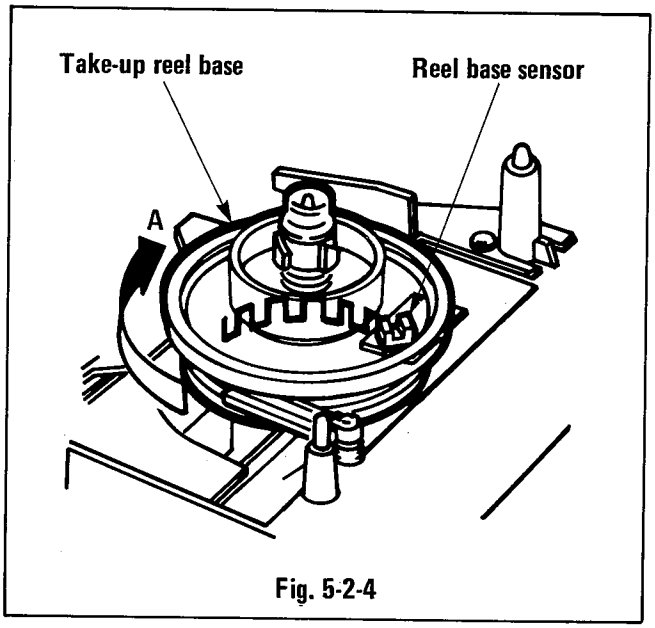


Fig. 5-2-4

[Manual Rotation of the Loading Ring] (See Figs. 5-2-5 ~ 5-2-7.)

(1) To load, manually rotate the loading motor pulley in the direction of arrow A, and the loading ring will rotate counter clockwise.
(2) At the completion of the loading condition, the loading ring stopper will function to stop the loading ring rotation. (See Fig. 5-2-6.)
(3) To unload, manually rotate the loading motor pulley in the direction of arrow B, and the loading ring will rotate clockwise.
(4) At the completion of the unloading condition, the loading ring stopper will function to stop the loading ring rotation. (See Fig. 5-2-7.)

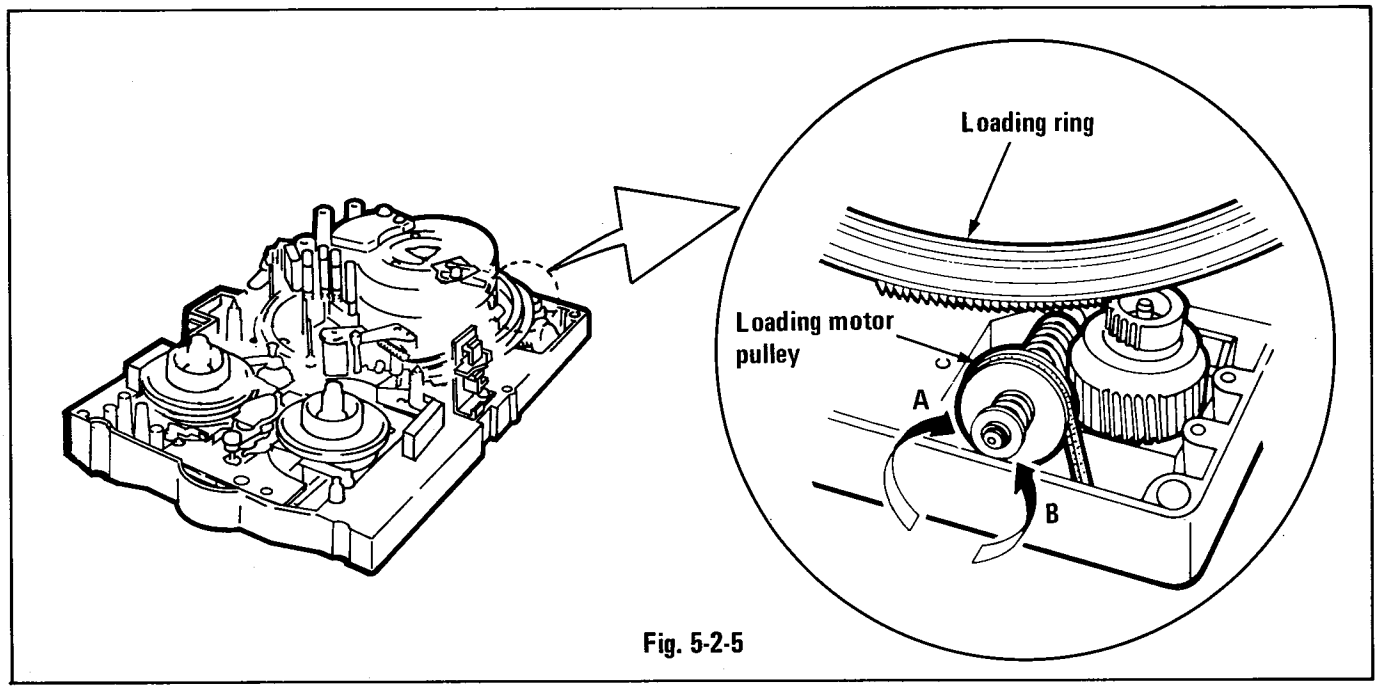


Fig. 5-2-5

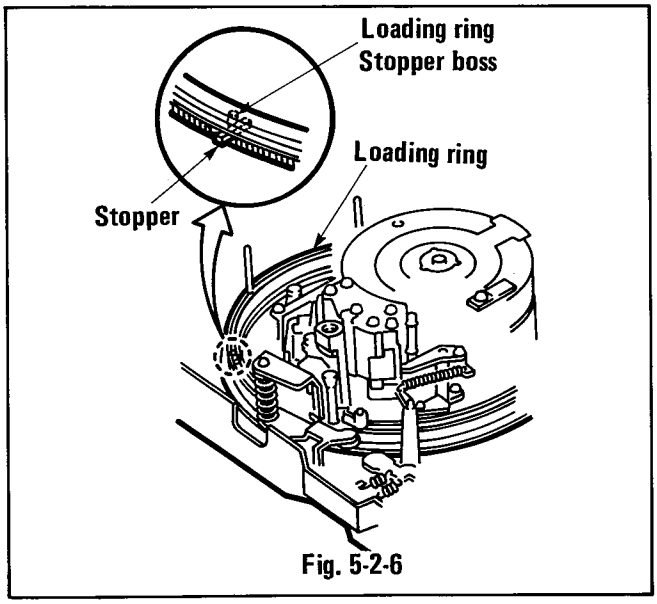


Fig. 5-2-6

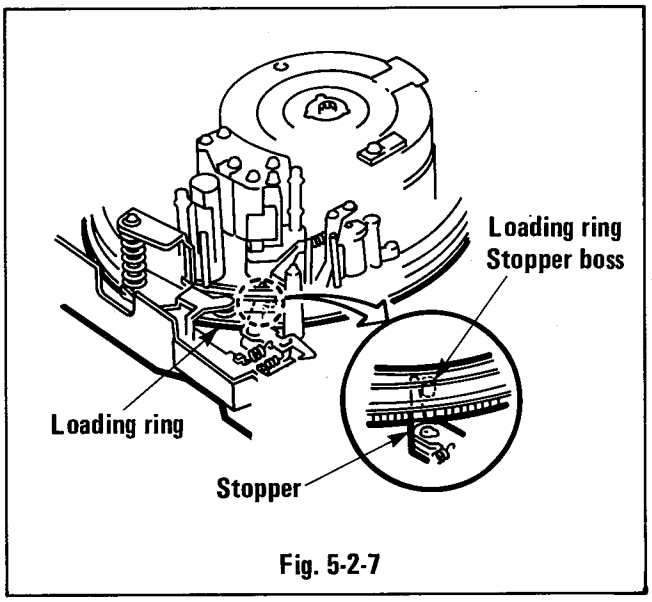


Fig. 5-2-7

3. ADJUSTMENTS

1. REEL BASE HEIGHT (See Fig. 5-3-1.)

If the reel base height is not correct, the tape inside the cassette will be unevenly wound. When this tape is used again, the unevenly wound tape will cause the tape tension to fluctuate, and correct tape path will be impossible to obtain.

(1) Turn off the power. [Set the power switch to the OFF position.]

(2) Remove the F.L. mechanism assembly.

(3) Insert the standard cassette plate (VJ-0105) and slide the gauge in the direction of the arrows.

(4) Confirm that, when the gauge stops, the reel bases are not in contact with surface A of the plate and are in contact with surface B.

(5) If the reel base is in contact with surface A, remove a spacer and check again.

(6) If the reel base is not in contact with surface B, add a spacer and check again.

(Caution)

Adjust the reel base height by adding or removing spacers (0.13T, 0.25T, 0.5T) as appropriate so that the height meets the specifications. Use the same method for both the take-up reel base and the supply reel base.

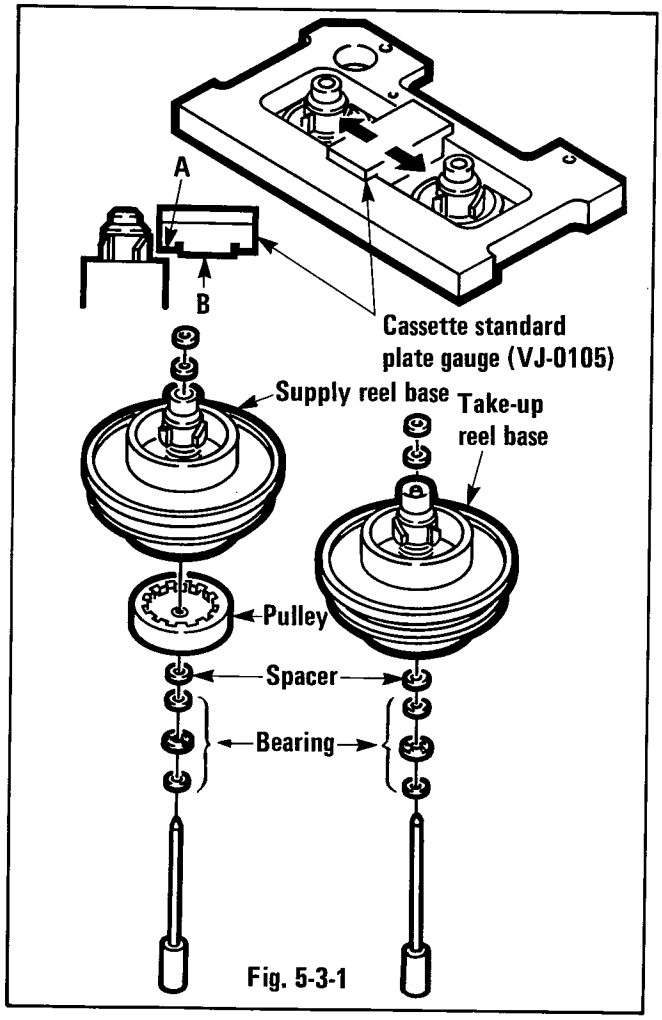


Fig. 5-3-1

2. BACK TENSION LEVER POSITION (See Fig. 5-3-2.)

The back tension must be applied uniformly to the tape so that the tape can travel smoothly with relation to the various heads and the guides. If the back tension is too strong, it will cause the tape to stretch, and if it is too weak, the tape will separate from the heads and tape guides.

(1) Turn off the power. [Set the power switch to the OFF position.]

(2) Remove the F.L. mechanism assembly.

(3) Manually operate the loading ring to reach the condition of loading completion.

(4) Insert the back tension adjustment gauge (VJ-0120) and check the position of the back tension guide.

(5) If the position of the back tension guide is not correct, loosen the screw (a), move the brake band bracket, and adjust the position of the back tension guide.

(6) Tighten the screw (a) to secure the position of the brake band bracket.

(7) Move the loading ring to the condition of unloading completion, and install the F.L. mechanism assembly.

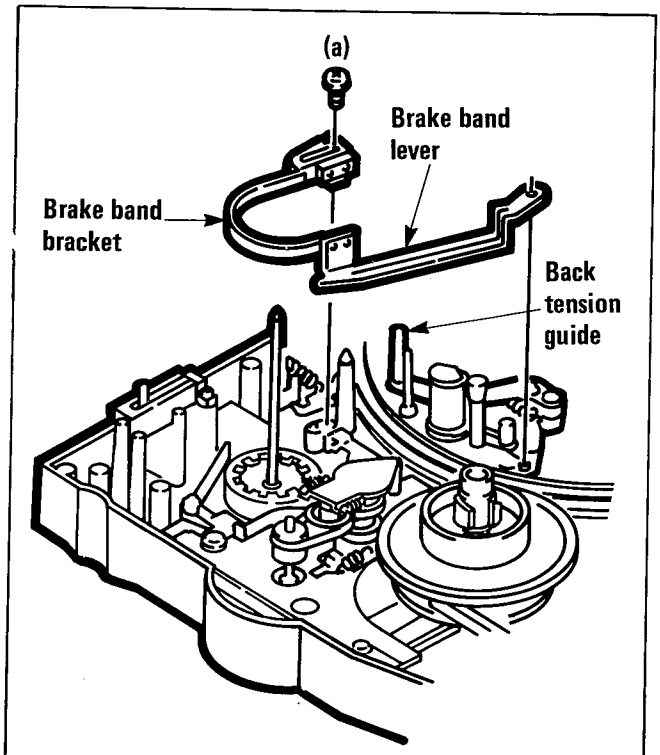


Fig. 5-3-2

3. WINDING TORQUE (See Figs. 5-3-3 ~ 5-3-6.)

In the various modes of the VCR, the tape which leaves the supply (or take-up) reel is wound around the take-up (or supply) reel. If the winding torque is too weak, the tape will not be wound properly and will become slack. On the other hand, if the winding torque is too strong, an excessive amount of tension will be applied to the tape and cause the tape to stretch.

[FWD Winding (Recording, Playback, Forward Search) Torque] (See Fig. 5-3-3.)

(1) Turn off the power. [Set the power switch to the OFF position.]
(2) Remove the F.L. mechanism assembly.
(3) Turn on the power. [Set the power switch to the ON position.]
(4) Mount the reel tension gauge (VJ-0038) on the take-up reel base, and then connect the string to the end of the spring tension gauge (VJ-0012).
(5) Press the PLAY button and measure the torque. The winding torque should be between 30 g and 53 g.
(6) If the measured value is not within the specified value range, replace the take-up reel base.
(7) Install the F.L. mechanism assembly.

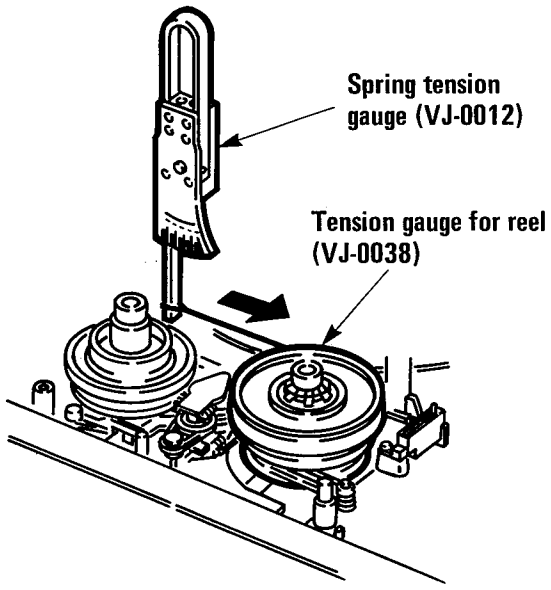


Fig. 5-3-3

[F FWD Winding Torque] (See Fig. 5-3-4)

(1) Turn off the power. [Set the power switch to the OFF position]
(2) Remove the F.L. mechanism assembly.
(3) Turn on the power. [Set the power switch to the ON position.]
(4) Mount the reel tension gauge (VJ-0038) on the take-up reel, and then connect the string to the end of the spring tension gauge (VJ-0014).
(5) Press the F FWD button, and measure the torque. The winding torque should be 165 g or more.
(6) If the measured value in less than the specified value, check for a problem with the reel motor belt, and replace the belt if necessary.
(7) Install the F.L. mechanism assembly.

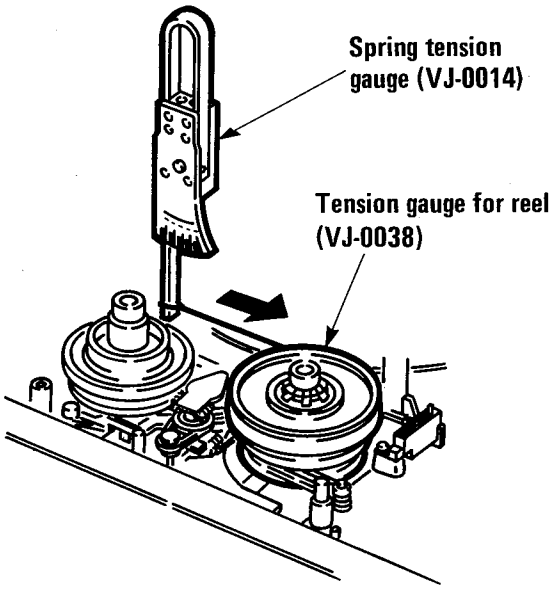


Fig. 5-3-4

[REW Winding Troque] (See Fig. 5-3-5.)

(1) Turn off the power. [Set the power switch to the OFF position.]
(2) Remove the F.L. mechanism assembly.
(3) Turn on the power. [Set the power switch to the ON position.]
(4) Mount the reel tension gauge (VJ-0038) on the supply reel, and then connect the string to the tip of the spring tension gauge (VJ-0014).
(5) Press the REW button, and measure the torque. The winding torque should be 165 g or more.
(6) If the measured value is less than the specified value, check for a problem with the reel motor belt, and replace the belt if necessary.
(7) Install the F.L. mechanism assembly.

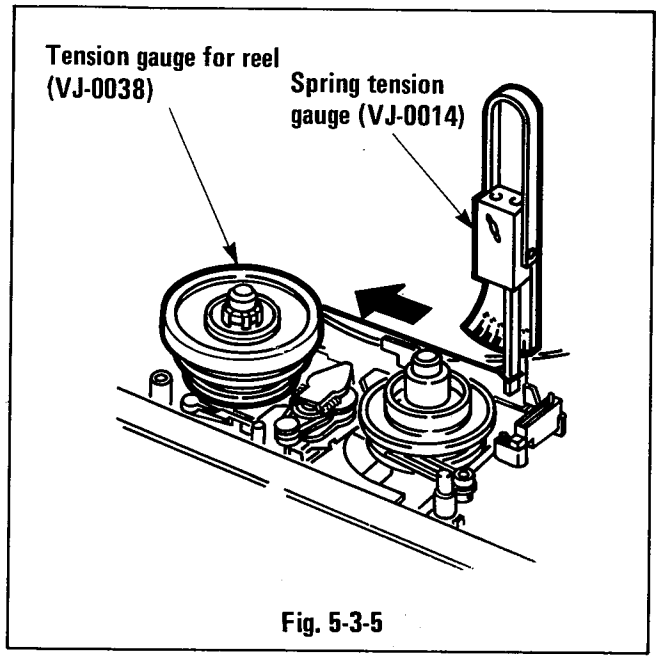


Fig. 5-3-5

[R-SEARCH Winding Torque] (See Fig. 5-3-6.)

(1) Turn off the power. [Set the power switch to the OFF position.]
(2) Remove the F.L. mechanism assembly.
(3) Turn on the power. [Set the power switch to the ON position.]
(4) Mount the reel tension gauge (VJ-0038) on the supply reel, and then connect the string to the end of the spring tension gauge (VJ-0012 or VJ-0014).
(5) Press the R-SEARCH button, and measure the torque. The winding torque should be between 65 g and 120 g.
(6) If the measured value is not within the specified value range, replace the supply reel base.
(7) Install the F.L. mechanism assembly.

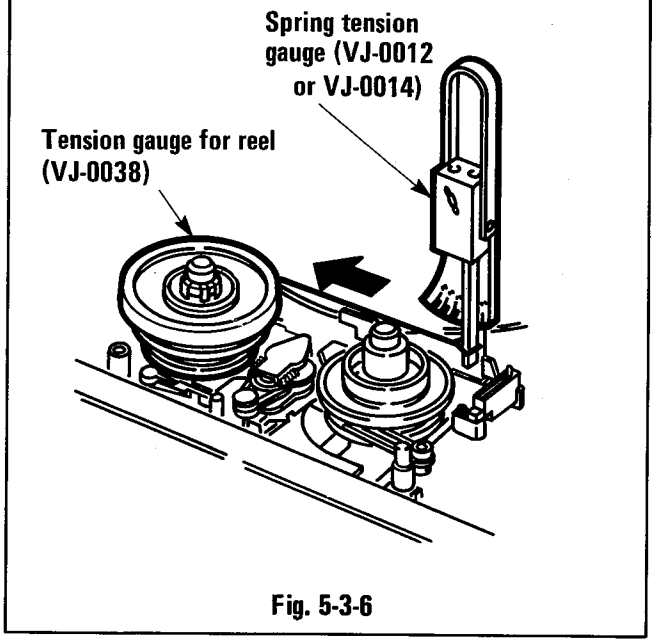


Fig. 5-3-6

4. TAPE PATH ADJUSTMENTS

Each of the heads and tape guides has been adjusted to the precisely correct position and height. These parts have a very strong influence on tape path, and should normally not be touched. If the video head drum, the full-erase head, the audio/control head, etc., have been replaced, playback the alignment tape (VJ-0142 or VJ-0161) or a previously recorded tape, and check the image. Only if there are problems with the image that cannot be corrected by adjusting the tracking control should tape path adjustments be made.
Also note that tape path adjustments should be made without removing the F.L. mechanism assembly (only remove the top board B).

1. BACK TENSION GUIDE VERTICAL POSITION (See Fig. 5-4-1.)

(1) Play a tape on which the edges are not stretched, and check that there is no looseness in both the upper and lower edges of the tape in the area of the back tension guide.
(2) If there is looseness, loosen (c) and adjust screws (a) and (b) so that the tension at the upper and lower edges of the tape is equal.

(Caution)
Use screw (a) to adjust the tension of the tape moving toward the back tension guide (direction A → A'), and use screw (b) to adjust the tension of the tape moving away from the back tension guide (direction B → B'). After completing the adjustments slightly tighten (C), and check to be sure that lever (d) is secure.

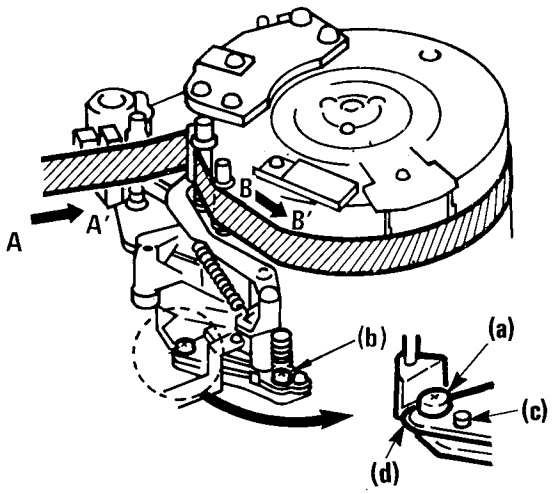


Fig. 5-4-1

2. FULL-ERASE HEAD TAPE GUIDES (See Figs. 5-4-2 ~ 5-4-4.)

(1) Connect an oscilloscope to the video output terminal (the check terminal of circuit board VP-1), and then playback the alignment tape (VJ-0142 or VJ-0161).
(2) Check the tape path in the area of the back tension guide. If there is any looseness in either the upper or lower edges of the tape, adjust tape guides (a), (b), and (c) so that the guide flanges are not in contact. (See Fig. 5-4-2.)
(3) While checking the waveform (envelope), adjust tape guide (a) so that the lower flange of the guide supports the lower edge of the tape. Next, adjust so that the size of amplitude A of the waveform is approximately −6dB (1/2 the size) in relation to the size of amplitude B of the waveform at a position approximately 2/5 from the head switching point. (See Fig. 5-4-3.)
(4) While checking with the inspection mirror (VJ-0015), adjust tape guides (b) and (c) so that the upper flanges of the guides do not cause any creases in the tape, lowering both guide (b) and guide (c) equally in order to maximize the size of amplitude A. (See Fig. 5-4-4.)

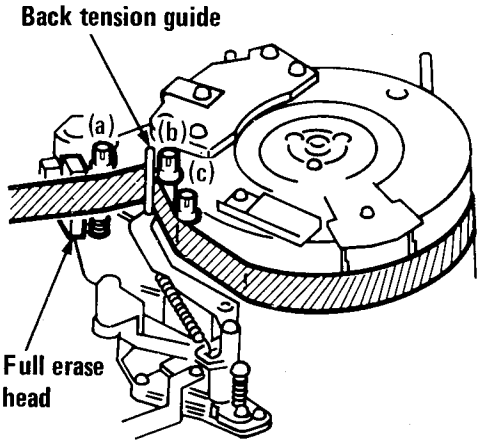


Fig. 5-4-2

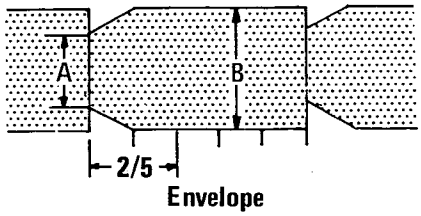


Fig. 5-4-3

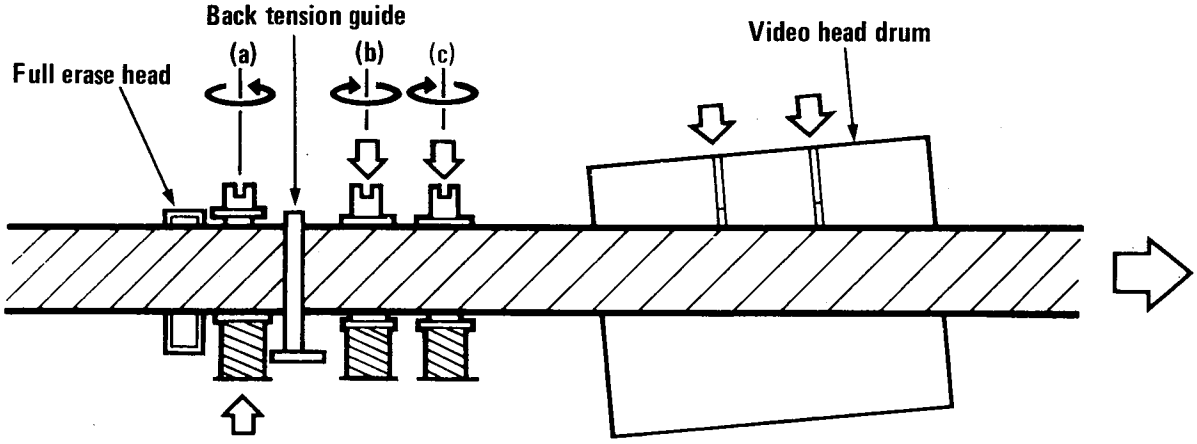


Fig. 5-4-4

3. AUDIO/CONTROL HEAD TAPE GUIDES (See Figs. 5-4-5 ~ 5-4-7.)

(1) Connect an oscilloscope to the video output terminal (the check terminal of circuit board VP-1), and playback the alignment tape (VJ-0142 or VJ-0161).

(2) Check the tape path in the area of the audio/control head. If there is any looseness in either the upper or lower edges of the tape, adjust tape guides (a) and (b) so that the guide flanges are not in contact. (See Fig. 5-4-5.)

(3) While checking the waveform (envelope), adjust tape guide (b) so that the upper flange of the guide supports the upper edge of the tape. Next, adjust so that the size of amplitude A of the waveform is approximately −3dB ~ −6dB (2/3 ~ 1/2 the size) in relation to the size of amplitude B of the waveform at a position approximately 2/5 from the head switching point. (See Fig. 5-4-6.)

(4) While checking with the inspection mirror (VJ-0015), adjust tape guide (a) so that the upper flange of the guide does not cause, any creases in the tape, lowering guide (a) so that the size of amplitude A is maximized. (See Fig. 5-4-7.)

(5) If either the upper or lower edge of the tape is not in contact with the audio/control head and the tape guides and there is a unbalance between the top and the bottom, it is probably caused by the audio/control head slanting either forward or backward. (Refer to item 4. AUDIO/CONTROL HEAD).

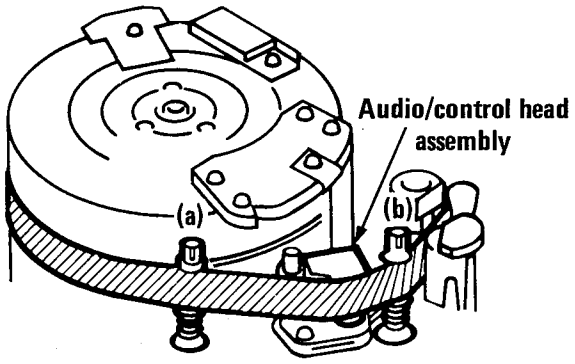
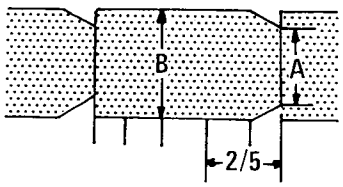


Fig. 5-4-5



Envelope

Fig. 5-4-6

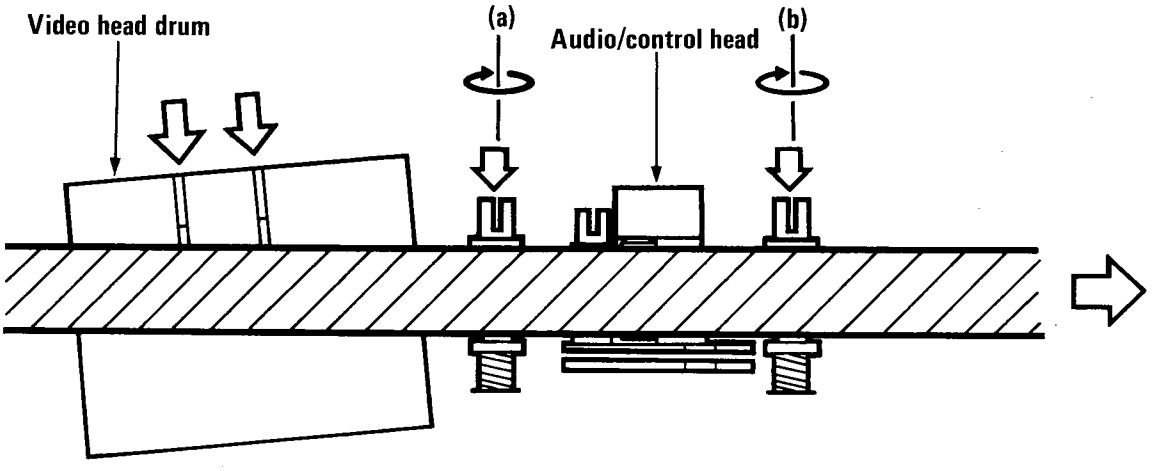


Fig. 5-4-7

4. AUDIO/CONTROL HEAD (See Fig. 5-4-8.)

Connect an oscilloscope to the audio output terminal (back side terminal part of set), and then playback the alignment tape (VJ-0142 or VJ-0161).

[Slanting Forward or Backward]

Check the tape path. If either the upper or lower edge of the tape is not in contact with the audio/control head and the tape guides, and there is an unbalance between the top and the bottom, adjust the allen screw (a) by using the hexagonal wrench (VJ-0022). When the allen screw (a) is turned to the right (clockwise), the audio/control head will slant forward, and when the allen screw (a) is turned to the left (counter clockwise), the audio/control head will slant backward.

[Head Height]

Adjust nut (b) with a flat-tipped screwdriver so that the audio output is maximized.

[Azimuth (Head Left-Right Angle)]

Adjust screw (c) with a Phillips (cross-tipped) screwdriver so that the audio output is maximized.

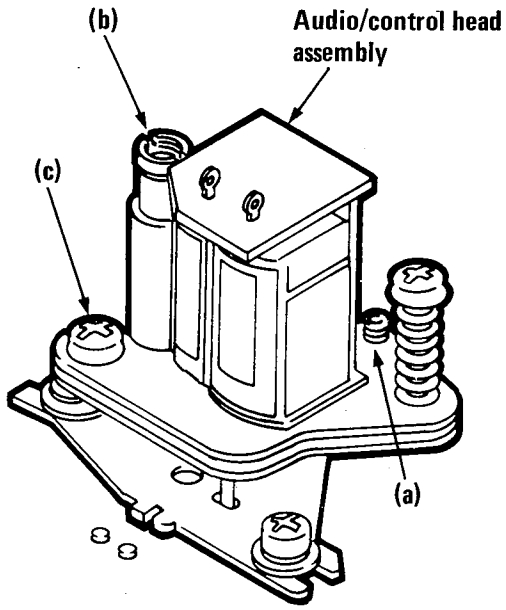


Fig. 5-4-8

5. TRACKING (See Fig. 5-4-9.)

(1) Connect an oscilloscope to the video output terminal (the check terminal of circuit board VP-1), and playback the alignment tape (VJ-0142 or VJ-0161).
(2) Loosen screws (a) and (b) approximately a 45° turn only, insert a flat-tipped screwdriver into the notch (c), and turn left and right to adjust so that the waveform (envelope) observed on the oscilloscope is maximized.

(Caution)
If screws (a) and (b) are loosened too much and the adjustment is made, the proper adjustment might be lost when the screws are retightened.

(3) After making the adjustment, retighten screws (a) and (b).
(4) Next, playback a tape which was previously recorded in the βIII mode, and confirm that the envelope is maximized when the tracking control is at the center position.

(Caution)
If the envelope appears to be minimized when the tracking control is at the center position, readjust the tracking control and set it to a different envelope maximum point.

(5) Turn the tracking control to the right and left so that the waveform (envelope) which appears on the oscilloscope changes fairly evenly.
(6) Record and playback a television broadcast, and confirm that there are no problems with the image on the screen.

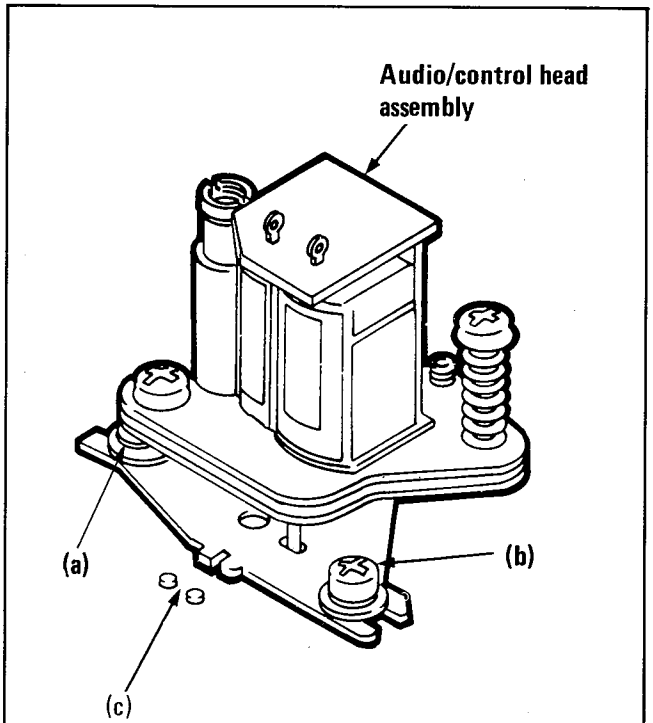
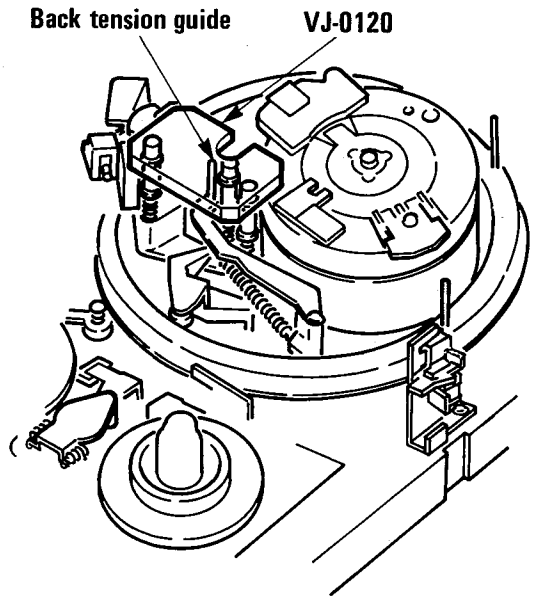


Fig. 5-4-9

5. USING METHOD OF MECHANISM JIG

[Adjustment gauge of back tension guide ... VJ-0120]

[METHOD]



[ADJUST]

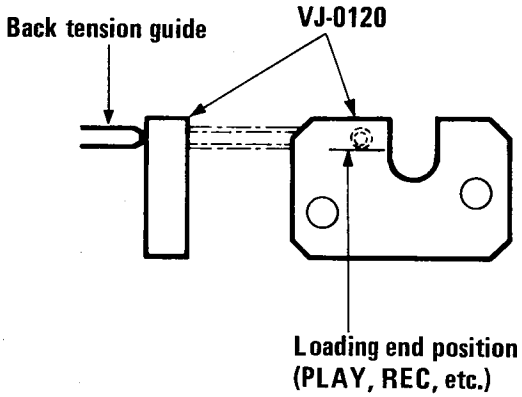
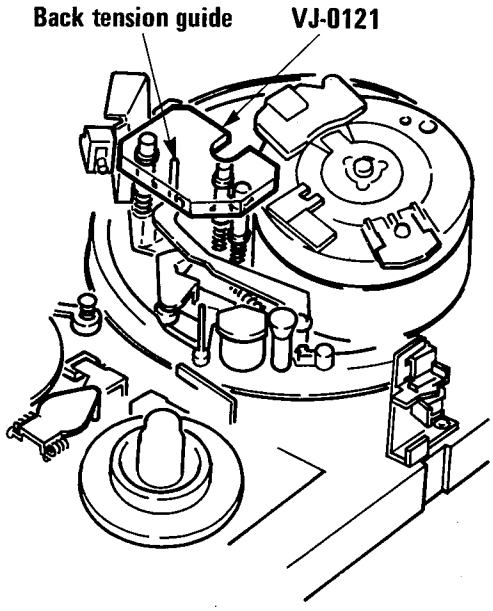


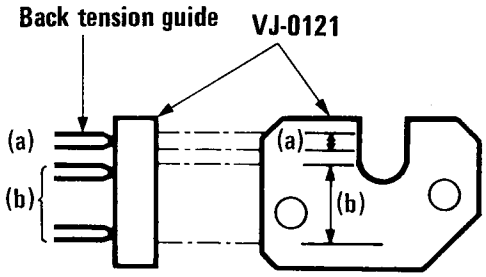
Fig. 5-5-1

[Checker adjustment gauge of back tension guide ... VJ-0121]

[METHOD]



[CHECK]



(a): Loading end PLAY position area
(b): F FWD, REW position area

Fig. 5-5-2

6. ELECTRICAL ADJUSTMENT

1. PREPARATIONS FOR ADJUSTMENT

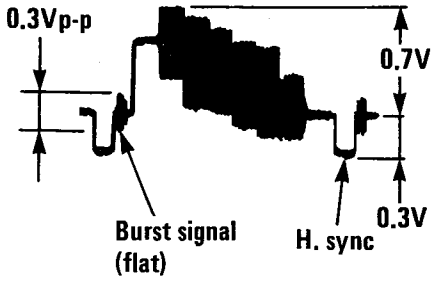
1. EQUIPMENT

(1) Color TV monitor
(2) Color bar generator (with RF)
(3) Audio frequency oscillator
(4) Attenuator
(5) Oscilloscope (double latent image; with delay function; frequency response: 10MHz or more; probe: 10:1)
(6) Frequency counter (countable to 10MHz or higher)
(7) Digital voltmeter
(8) AC voltmeter
(9) In/output probes
(10) Distortion meter

2. SET-UP

Because the RF input signal is used for adjustment of circuits, connect the color bar generator to the VHF input terminal of the VCR. The RF input signal is processed by the tuner and IF circuit. It is important that the video output signal of the IF circuit satisfy the items shown in figure.
Connect the oscilloscope to the VIDEO OUT terminal of the video circuit, and then check the video output signal.

- The amplitude of the sync signal should be approximately 0.3Vp-p.
- The amplitude of the video signal should be approximately 0.7Vp-p.
- While observing the oscilloscope or TV screen, make fine-tuning adjustments so that the color burst amplitude is approximately 0.3Vp-p.
- Check to be sure that there is no spike noise in the sync part of the horizontal sync signal.



Video output (color bar) signal

Fig. 6-1-1

3. ALIGNMENT TAPE

(1) Alignment tape for service use
. . . VJ-0142 (KR5-1M)

Tape speed	Video signal	Audio signal	Time
βII 20.0mm/sec	Color bar	3kHz –5dB	4 minutes
	Monoscope (skew)	333Hz –25dB	4 minutes
	RF sweep	5kHz –25dB	4 minutes
	1MHz (A channel)	1kHz –5dB	4 minutes
βIII 13.3mm/sec	Color bar	3kHz –5dB	4 minutes
	Monoscope	5kHz –25dB	4 minutes
	Color bar	Beta hi-fi 400Hz ±25kHz DEV. (33% DEV.)	4 minutes

Table 6-1-1

(2) Alignment tape for service use
. . . VJ-0161 (KR5-1V)

Tape speed	Video signal	Audio signal	Time
βII 20.0mm/sec.	Color bar	3kHz –5dB	4 minutes
	Monoscope (skew)	333Hz –25dB	4 minutes
	RF sweep	5kHz –25dB	4 minutes
	1MHz (A channel)	1kHz –5dB	4 minutes
	Color bar	Beta hi-fi 400Hz ±25kHz DEV. (33% DEV.)	4 minutes
βII 13.3mm/sec.	Color bar	3kHz –5dB	4 minutes
	Monoscope	5kHz –25dB	4 minutes

Table 6-1-2

[Specifications]

(1) Video signal system
- RF sweep
  Record frequency — Max. frequency 8.5±0.5MHz
  Marker frequency and deviation — 1, 2, 3.58, 4.5, 5.1MHz±2%
  Marker modulation during recording — 100%
- Monoscope
  Switching position — βII mode (skew)

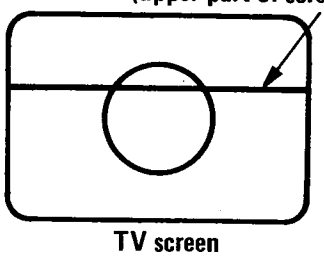


Fig. 6-1-2

- Color bar 75%
- 1MHz CH-A tracking and CTL position
  - Recording signal
    - frequency and deviation 1.0±0.1MHz
  - Recording track CH-1 (+7°)
  - CTL position check
  - Linearity bending width ±6μmp-p or less
  - CTL position ±3μmp-p or less

(2) Audio signal system

- For level adjustment
  - Recording signal
    - frequency and deviation 333Hz±3%
  - Recording level βII Reference level −25±0.5dB
    βIII Reference level ±0.5dB
- For frequency response adjustment
  - Recording signal
    - frequency and deviation 5kHz±3%
  - Recording level Reference level −25±0.5dB
- For speed deviation measurement
  - Recording signal
    - frequency and deviation 3kHz±0.15Hz
  - Recording level Reference level −5±3dB
- For audio head height adjustment
  - Recording signal
    - frequency and deviation 1kHz±3%
  - Recording level Reference level −5±0.5dB
- For audio level adjustment (Beta hi-fi)
  - Recording signal
    - frequency and deviation 400Hz ±3% (L and R)
  - Recording level ±25kHz DEV ±0.6kHz

(3) Servo signal system

- CTL frequency 29.97Hz
- Duty cycle 50%
- Polarity Positive

(4) Other

- Tape speed βII 20.0mm/sec±0.2%
  βIII 13.333mm/sec±0.2%
- Speed deviation of the one winding 0.03%
  - Sampling time 10 seconds
- Recording time
  28 minutes (winding start, 25 count, no signal)

(3) Audio level (βII)..... (Normal AUDIO)

VJ-0126 (KR3-1D)
[Specifications]

(1) Video signal system No recording signal
(2) Audio signal system
- Recording signal
  - frequency and deviation 333Hz±5%
- Recording level Reference level±0.5dB or less

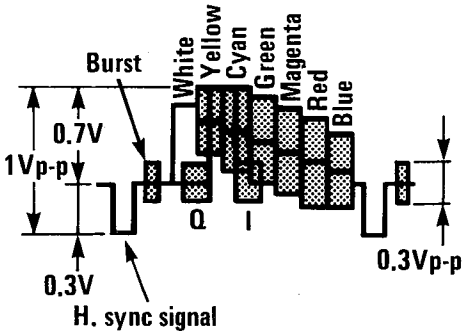
(3) Servo signal system
- CTL frequency 29.97Hz
- Duty cycle 50%
- Polarity Positive

(4) Other

- Tape speed βII
- Recording time
  40 minutes (winding start, 50 count, no signal)
- Recording track pattern
  1.24±0.01mm from top edge of tape

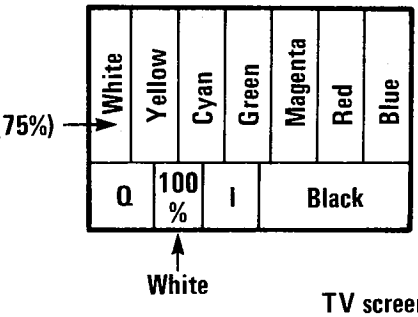
4. COLOR BAR SIGNAL

The 75% color bar signal recorded on the alignment tape is shown in Figure.



Color bar signal waveform

Fig. 6-1-3



Color bar pattern

Fig. 6-1-4

2. SERVO CIRCUIT ADJUSTMENTS (HEAD SERVO SYSTEM ADJUSTMENTS)

After finishing steps 1 through 5 of this adjustment, repeat step 3 to make the A.P.C. LOCK PHASE adjustment.

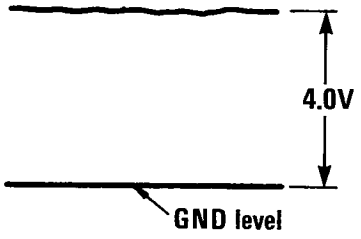
1. HEAD SWITCHING POSITION PRESET

(1) Set SVR4001, SVR4002 and SVR4003 to the approximate center of their turning range.
(2) Set the tracking control to the center (click stop) position.

2. A.P.C. LOCK VOLTAGE

Adjustment Location	SVR4007
Measuring Point	Pin (5) of CN4007
Measuring Equipment	Oscilloscope or Digital voltmeter
Conditions of Adjustment	REC mode

(1) Load a cassette. Put the VCR in the βII or βIII TV REC mode.
(2) Connect an oscilloscope or digital voltmeter to (5) of CN4007.
(3) Adjust SVR4007 to get 4.0±0.2V.



A.P.C. lock voltage

Fig. 6-2-1

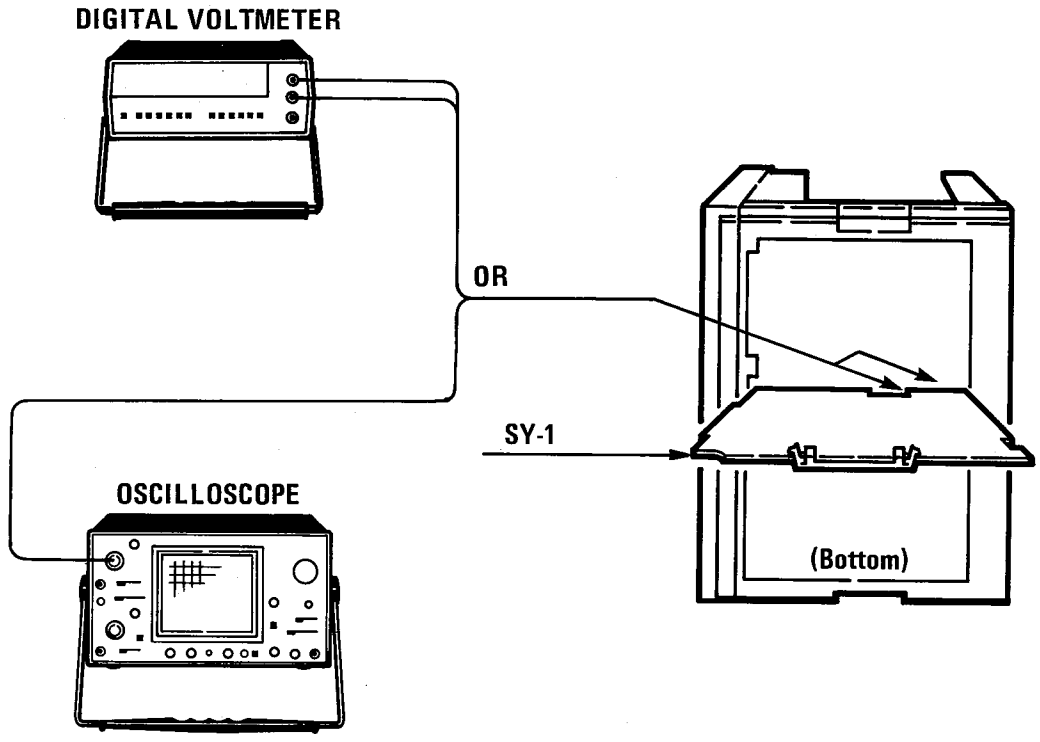


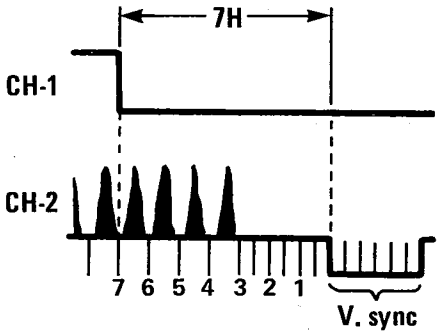
Fig. 6-2-2

3. A.P.C. LOCK PHASE

Adjustment Location	SVR4003
Measuring Point	Pin (4) of CN4007 TP1011 or TP1003 (VD-1)
Measuring Equipment	Oscilloscope
Conditions of Adjustment	REC mode

(1) Load a cassette. Put the VCR in the TV REC mode.
(2) Connect CH-1 of an oscilloscope to (4) of CN4007, and CH-2 to TP1011 (VIDEO OUT terminal) or TP1003 of the VD-1 board.
(3) Adjust SVR4003 so that the phase of the leading edge of the CH-2 vertical sync signal is delayed 7.0±0.5H from the fall of the CH-1 waveform.

CH-1: RF switching pulse
CH-2: Video signal (vertical sync signal) ... TP1011



A.P.C. lock position

Fig. 6-2-3

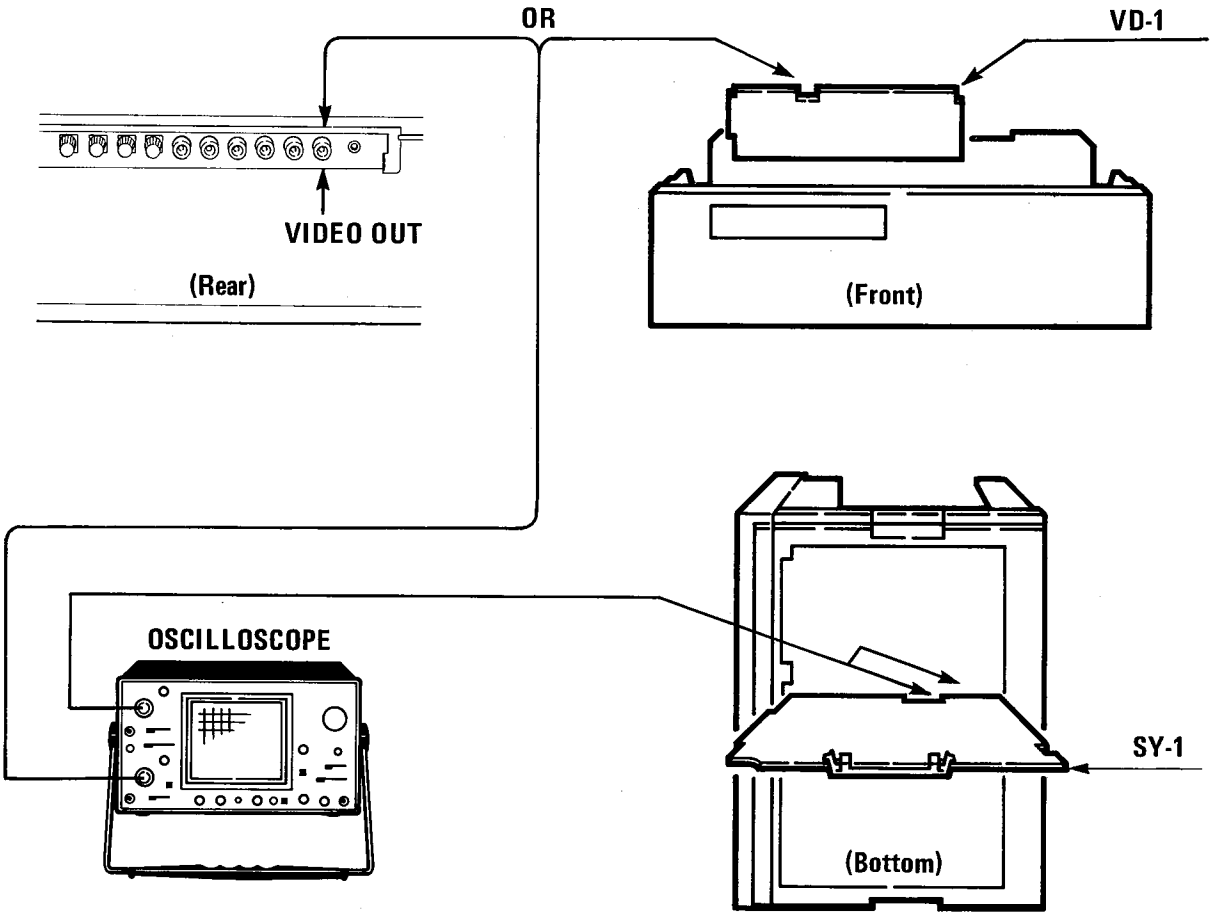
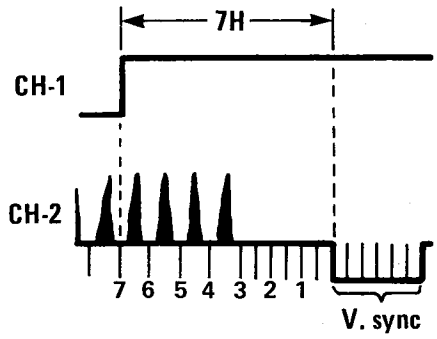


Fig. 6-2-4

4. PG-A SWITCHING POSITION

Adjustment Location	SVR4001
Measuring Point	Pin (4) of CN4007 TP1011 or TP1003 (VD-1)
Measuring Equipment	Oscilloscope Alignment tape
Conditions of Adjustment	PLAY mode

(1) Load the alignment tape. Put the VCR in the PLAY mode.
(2) Connect CH-1 of an oscilloscope to (4) of CN4007, and CH-2 to TP1011 (VIDEO OUT terminal) or TP1003 of the VD-1 board.
(3) Adjust SVR4001 so that the phase of the leading edge of the vertical sync signal is delayed 7.0±0.5H from the rise of the CH-1 waveform.
CH-1: RF switching pulse
CH-2: Video signal (vertical sync signal) ... TP1011



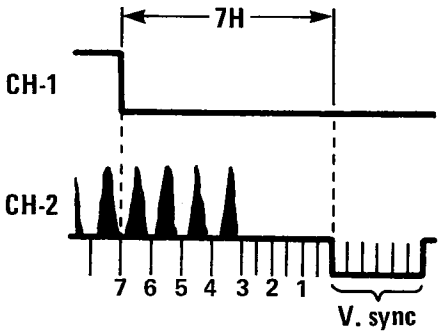
PG-A switching position

Fig. 6-2-5

5. PG-B SWITCHING POSITION

Adjustment Location	SVR4002
Measuring Point	Pin (4) of CN4007 TP1011 or TP1003 (VD-1)
Measuring Equipment	Oscilloscope Alignment tape
Conditions of Adjustment	PLAY mode

(1) Load the alignment tape. Put the VCR in the PLAY mode.
(2) Connect CH-1 of an oscilloscope to (4) of CN4007, and CH-2 to TP1011 (VIDEO OUT terminal) or TP1003 of the VD-1 board.
(3) Adjust SVR4002 so that the phase of the leading edge of the vertical sync signal is delayed 7.0±0.5H from the fall of the CH-1 waveform.
(4) Make a fine adjustment of SVR4002 so that the phase difference of the rise and fall of the RF switching pulse is 0.2H or less in relation to the leading edge of the vertical sync signal.
CH-1: RF switching pulse
CH-2: Video signal (vertical sync signal) ... TP1011



PG-B switching position

Fig. 6-2-6

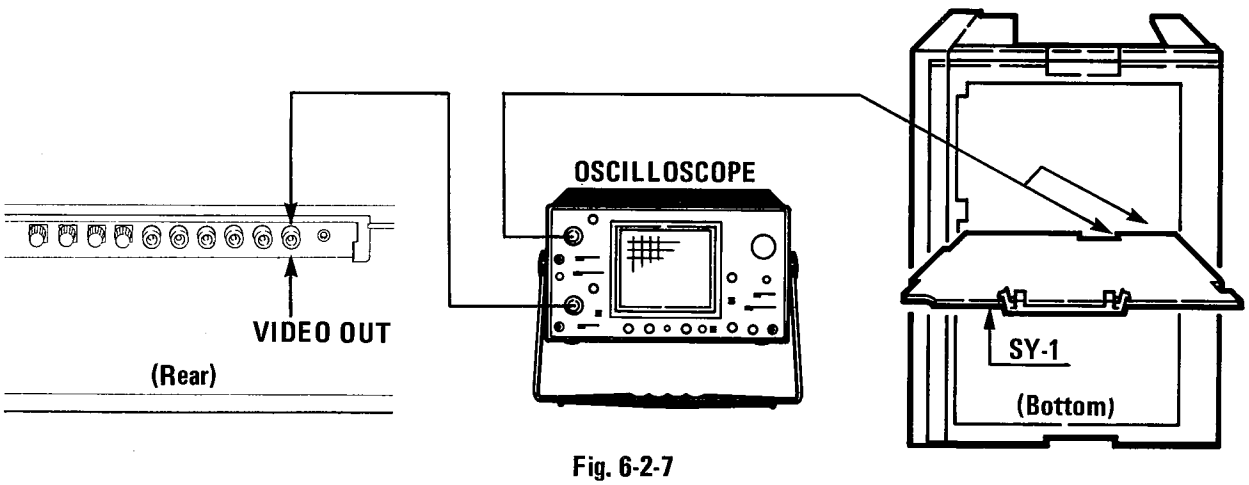


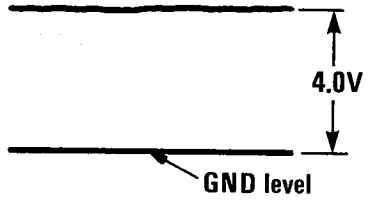
Fig. 6-2-7

(CAPSTAN SERVO SYSTEM ADJUSTMENTS)

1. βIII A.P.C. LOCK VOLTAGE

Adjustment Location	SVR4009
Measuring Point	Pin (2) of CN4007
Measuring Equipment	Oscilloscope or Digital voltmeter
Conditions of Adjustment	REC mode

(1) Load a cassette. Put the VCR in the βIII TV REC mode.
(2) Connect an oscilloscope or digital voltmeter to (2) of CN4007.
(3) Adjust SVR4009 to get 4.0±0.2V.



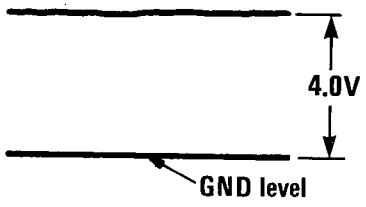
βIII A.P.C. lock voltage

Fig. 6-2-8

2. βII A.P.C. LOCK VOLTAGE

Adjustment Location	SVR4008
Measuring Point	Pin (2) of CN4007
Measuring Equipment	Oscilloscope or Digital voltmeter
Conditions of Adjustment	REC mode

(1) Load a cassette. Put the VCR in the βII TV REC mode.
(2) Connect an oscilloscope or digital voltmeter to (2) of CN4007.
(3) Adjust SVR4008 to get 4.0±0.2V.



βII A.P.C. lock voltage

Fig. 6-2-9

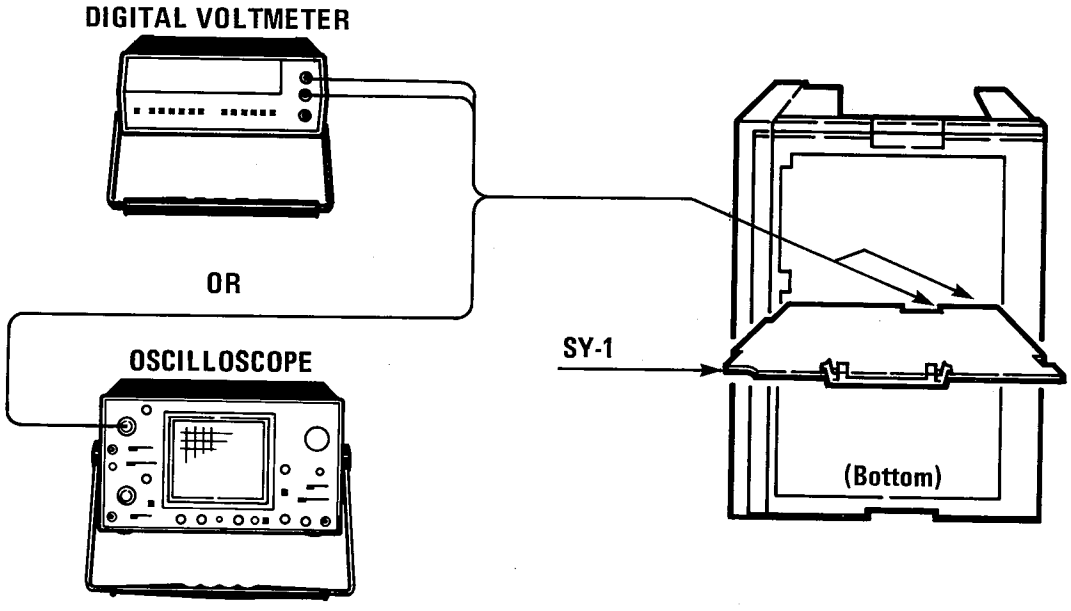


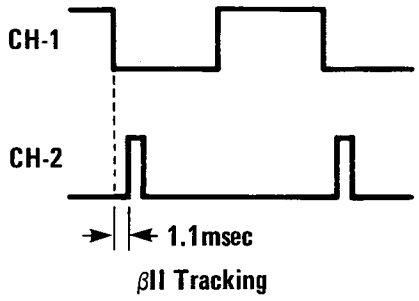
Fig. 6-2-10

3. βII TRACKING

Adjustment Location	SVR4005
Measuring Point	Pin (1) of CN4007 Pin (4) of CN4007
Measuring Equipment	Oscilloscope
Conditions of Adjustment	PLAY mode

(1) Set the tracking control to the center (click stop) position.
(2) Load a cassette. Record a TV broadcast at βII, and then put the VCR in the PLAY mode.
(3) Connect CH-1 of an oscilloscope to (4) of CN4007, and CH-2 to (1) of CN4007.
(4) Adjust SVR4005 so that the phase of the rise of the CH-2 waveform is 1.1±0.5msec after the fall of the CH-1 waveform. In this instance, delay the CH-2 waveform.

CH-1: RF switching pulse
CH-2: Control signal (playback CTL pulse)



βII Tracking

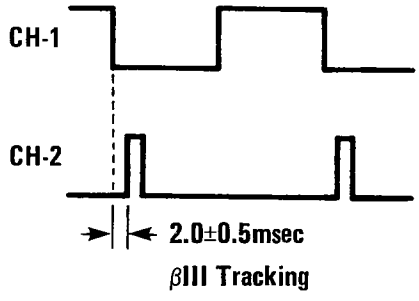
Fig. 6-2-11

4. βIII TRACKING

Adjustment Location	SVR4006
Measuring Point	Pin (1) of CN4007 Pin (4) of CN4007
Measuring Equipment	Oscilloscope
Conditions of Adjustment	PLAY mode

(1) Set the tracking control to the center (click stop) position.
(2) Load a cassette. Record a TV broadcast at βIII, and then put the VCR in the PLAY mode.
(3) Connect CH-1 of an oscilloscope to (4) of CN4007, and CH-2 to (1) of CN4007.
(4) Adjust SVR4006 so that the phase of the rise of the CH-2 waveform is 2.0±0.5msec after the fall of the CH-1 waveform. In this instance, delay the CH-2 waveform.

CH-1: RF switching pulse
CH-2: Control signal (Playback CTL pulse)



βIII Tracking

Fig. 6-2-12

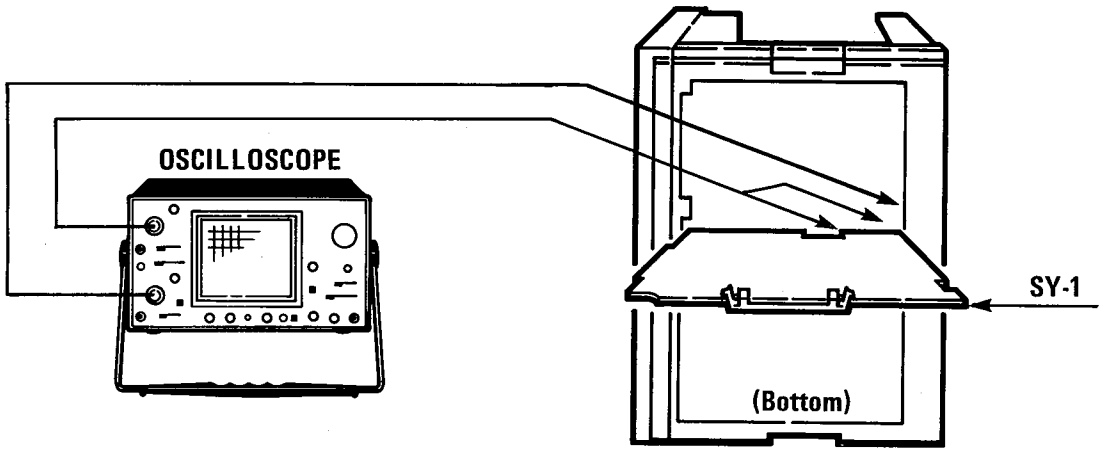


Fig. 6-2-13

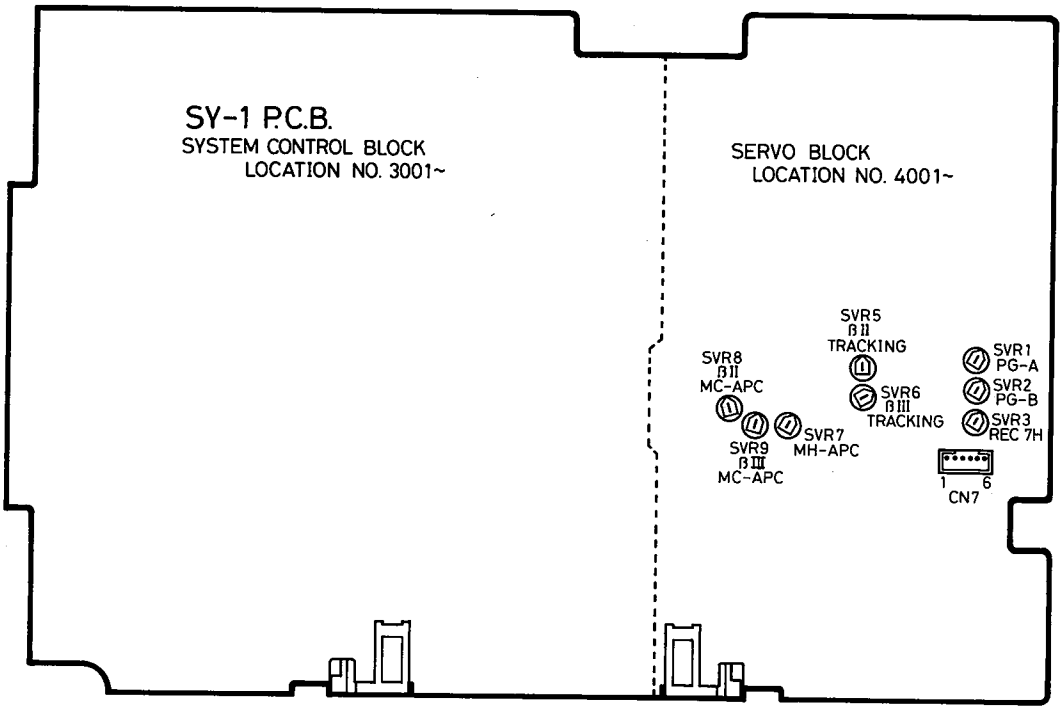


Fig. 6-2-14 Circuit Board SY-1 (Parts side view)

3. VIDEO CIRCUIT ADJUSTMENTS

(ADJUSTMENT CAUTIONS)

There are two types of adjustments of the video circuit: the playback group of adjustments and the recording group of adjustments. The playback group of adjustments are made in the PLAY mode by using an alignment tape. The recording group of adjustments are made in the E-E mode and the REC mode. There are, moreover, Y (luminance) signal adjustments and C (chrominance) signal adjustments both for the playback group of adjustments and for the recording group.

The order in which adjustments are to be made is described below. For video circuit adjustments, it is a basic principle that, if adjustments are not made in the order described below, correct adjustments will not be possible and/or the adjusted value may deviate.

For these reasons, then, if a readjustment is made during the adjustment process, readjustment of all subsequent items will also therefore be necessary.

In particular, items VD-1 CIRCUIT BOARD 1, 4, 5 and 9 should be given special attention.

(SETTINGS BEFORE ADJUSTMENT)

- Connect a color TV to the VHF OUT terminal.
- Unless otherwise specified, set the tracking control to their center (click stop) position.
- Check to be sure that the tape path adjustment is normal.

VP-1 CIRCUIT BOARD

Order	Adjustment	Mode	Y/C
1	Pre-amp. frequency response	PLAY	Y
2	D.O.C. sensitivity	PLAY	Y
3	Color (chrominance) signal recording current	REC + PAUSE	C
4	Monochrome (luminance) signal recording current	REC	Y

VD-1 CIRCUIT BOARD

Order	Adjustment	Mode	Y/C
1	3.58MHz oscillation frequency	PLAY	C
2	A.G.C.	E – E	Y
3	Comb filter	E – E	Y
4	E – E video output level	E – E	Y/C
5	A.C.C. level	E – E	C
6	4.27MHz B.P.F.	E– E	C
7	Chrominance signal (4.27MHz) carrier leak	E – E	C
8	(44-1/4)f_H V.C.O.	PLAY	C
9	Noise canceller	PLAY	Y
10	Luminance signal playback level	PLAY	Y/C
11	FM frequency deviation	REC	Y
12	Sync tip carrier frequency (B HI-FI mode)	E-E	Y
13	Sync tip carrier frequency (B HI-FI off mode)	E-E	Y
14	Special playback dummy V (vertical) sync insert position	SP. PLAY	Y

(VIDEO PRE-AMPLIFIER SYSTEM ADJUSTMENTS)

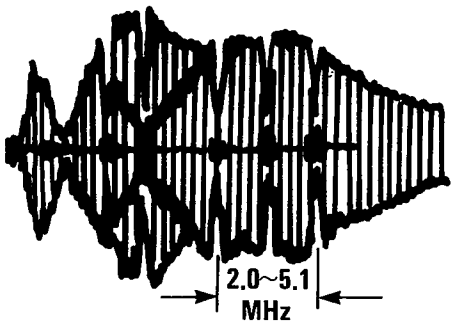
1. PRE-AMPLIFIER FREQUENCY RESPONSE

Make this adjustment separately for CH-A and CH-B. The CH-B adjustments are shown in parentheses.

Adjustment Location	SVR1501 SVR1502
Measuring Point	Pin (2) of CN1504 Pin (1) of CN1504
Measuring Equipment	Oscilloscope Alignment tape
Conditions of Adjustment	PLAY mode

(1) Connect an oscilloscope to (2) of CN1504, and connect the external trigger terminal to (1) of CN1504.
(2) Playback the βII RF sweep signal part of the alignment tape. Adjust the tracking control while watching the oscilloscope, and set the tracking position so that the output waveform is maximized.
(3) Adjust SVR1501 (SVR1502) so that the level is flat between 2MHz and 5.1MHz.
In this instance, adjust so that the level difference is in the ±10% range between 2MHz and 5.1MHz.

SVR1501 ..... Equalizer A
SVR1502 ..... Equalizer B
CN1054 (2)..... Envelope
CN1054 (1)..... RF switching pulse



Pre-amp. frequency response

Fig. 6-3-1

2. D.O.C. SENSITIVITY

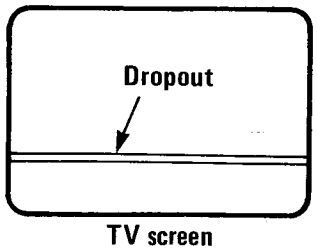
Adjustment Location	SVR1503
Measuring Point	TV screen
Measuring Equipment	Color TV monitor
Conditions of Adjustment	PLAY mode

(1) Using an already recorded video tape, playback a portion of the tape where dropout is great.

(Caution)
Set the tracking control to the best point.

(2) Turn SVR1503 all the way to the left (counter clockwise).
(3) While watching the TV screen, turn SVR1503 slowly to the right and adjust it to the point where dropout is no longer seen.
(4) Playback the tape once again and check to be sure that dropout has disappeared from the TV screen.

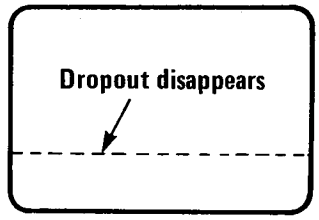
(Caution)
Note that no picture will be seen if SVR1503 is turned completely to the right (clockwise).



TV screen

Dropout compensation (before adjustment)

Fig. 6-3-2



TV screen

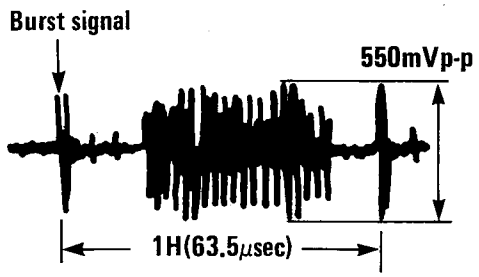
Dropout compensation (after adjustment)

Fig. 6-3-3

3. COLOR (CHROMINANCE) SIGNAL RECORDING CURRENT

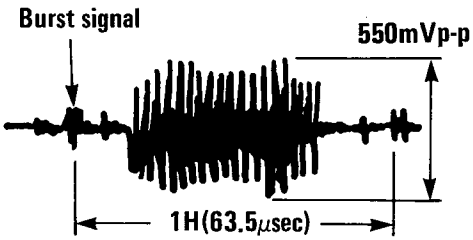
Adjustment Location	SVR1505
Measuring Point	TP1503
Measuring Equipment	Color bar generator Oscilloscope
Conditions of Adjustment	REC + PAUSE mode

(1) Input a color bar signal and put the VCR in the REC +PAUSE mode.
(2) Connect an oscilloscope to TP1503.
(3) Adjust SVR1505 so that the chrominance signal recording level at βIII is 550±10mVp-p.
(4) Check to be sure that the burst signal changes approximately 6dB (1/2 size) when the VCR is switched to βII.



Chrominance signal recording current (βIII)

Fig. 6-3-4



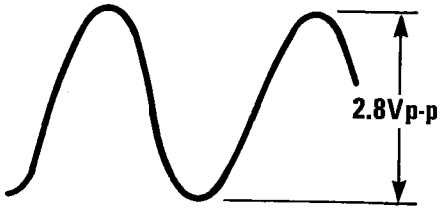
Chrominance signal recording current (βII)

Fig. 6-3-5

4. MONOCHROME (LUMINANCE) SIGNAL RECORDING CURRENT

Adjustment Location	SVR1504
Measuring Point	TP1501
Measuring Equipment	Oscilloscope
Conditions of Adjustment	REC mode

(1) Set the REC MODE selector to the STEREO position and put the VCR in the no-signal REC mode.
(2) Connect an oscilloscope to TP1501.
(3) Adjust SVR1504 to get 2.8±0.1Vp-p.



Luminance signal recording current

Fig. 6-3-6

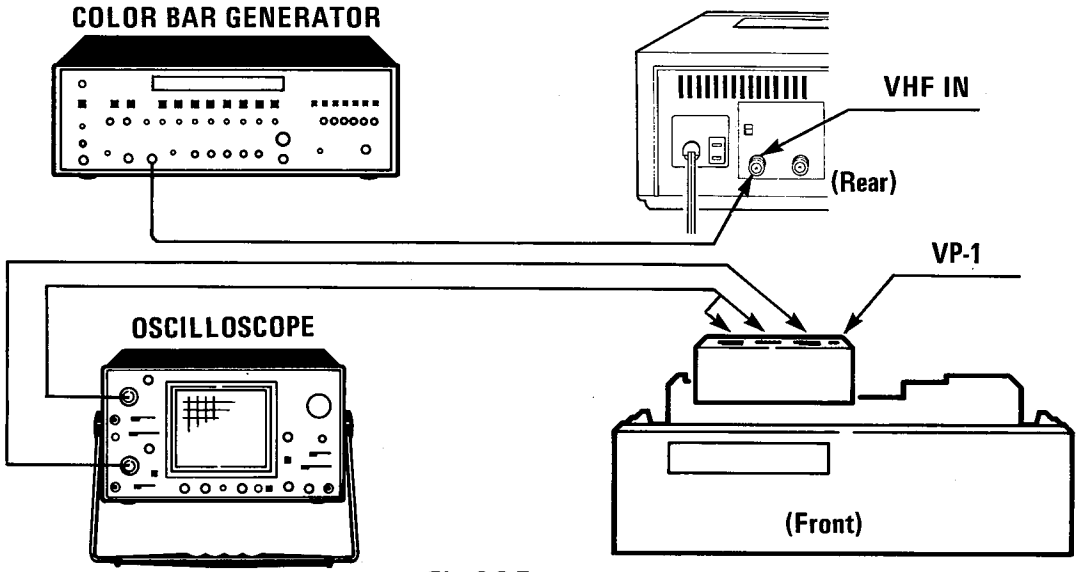


Fig. 6-3-7

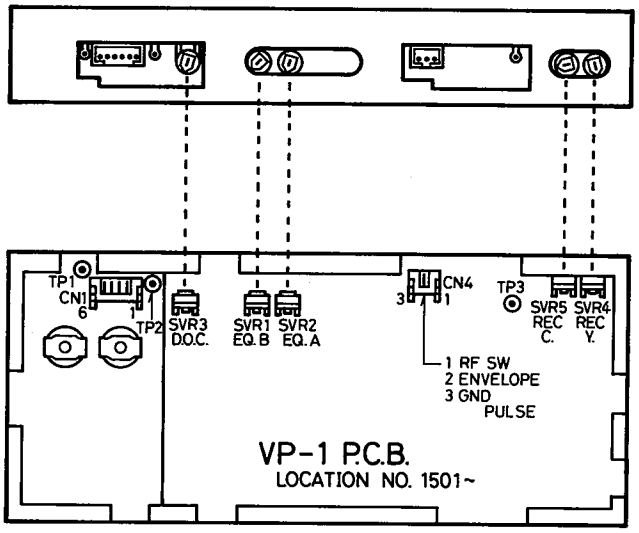


Fig. 6-3-8 Circuit Board VP-1 (Parts side view)

(VIDEO SYSTEM ADJUSTMENTS)

1. 3.58MHz OSCILLATION FREQUENCY

Adjustment Location	T1001
Measuring Point	TP1004
Measuring Equipment	Frequency counter
Conditions of Adjustment	PLAY mode

(1) Play an unrecorded video tape.
(2) Connect a frequency counter to TP1004.
(3) Adjust T1001 to 3.579545MHz±10Hz.

(Caution)
The impedance of the frequency counter measuring probe may cause a change in the frequency.

2. A.G.C.

Adjustment Location	SVR1008 SVR1011
Measuring Point	TP1005
Measuring Equipment	Color bar generator Oscilloscope
Conditions of Adjustment	E-E mode

(1) Input a signal which includes 100% white from a color bar generator, and put the VCR in the STOP mode.
(2) Connect an oscilloscope to TP1005.
(3) Turn SVR1011 all the way to the right (looking from the parts surface), and maximize the A.G.C. level.
(4) Adjust SVR1008 to get 0.76±0.01Vp-p.
(5) Then use the sync level VR on the color bar generator to reduce the sync signal level of the input signal to half.
(6) Adjust SVR1011 to get 0.83±0.01Vp-p.

- When adjusting with a color bar generator not equipped with a sync VR.

(1) Input a signal which includes 100% white from a color bar generator, and put the VCR in the STOP mode.
(2) Connect an oscilloscope to TP1005.
(3) Turn SVR1011 all the way to the right (looking from the parts surface), and maximize the A.G.C. level.
(4) Set the SYNC A.G.C. at 0.90Vp-p by adjusting SVR1008.
(5) Set the signal level to the point where it becomes small (point at which the level begins to decrease) by adjusting SVR1011.
(6) Adjust SVR1008 get to 0.76Vp-p.

(Caution)
Since this adjustment method uses a simple color bar generator not equipped with a sync VR, the adjustment will vary depending on the position at which SVR1011 is set, and so, therefore, be sure to set the signal level to the point at which it begins to decrease.

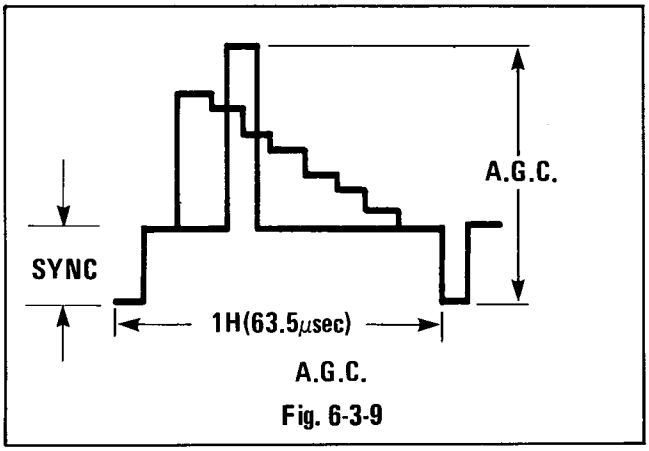


Fig. 6-3-9

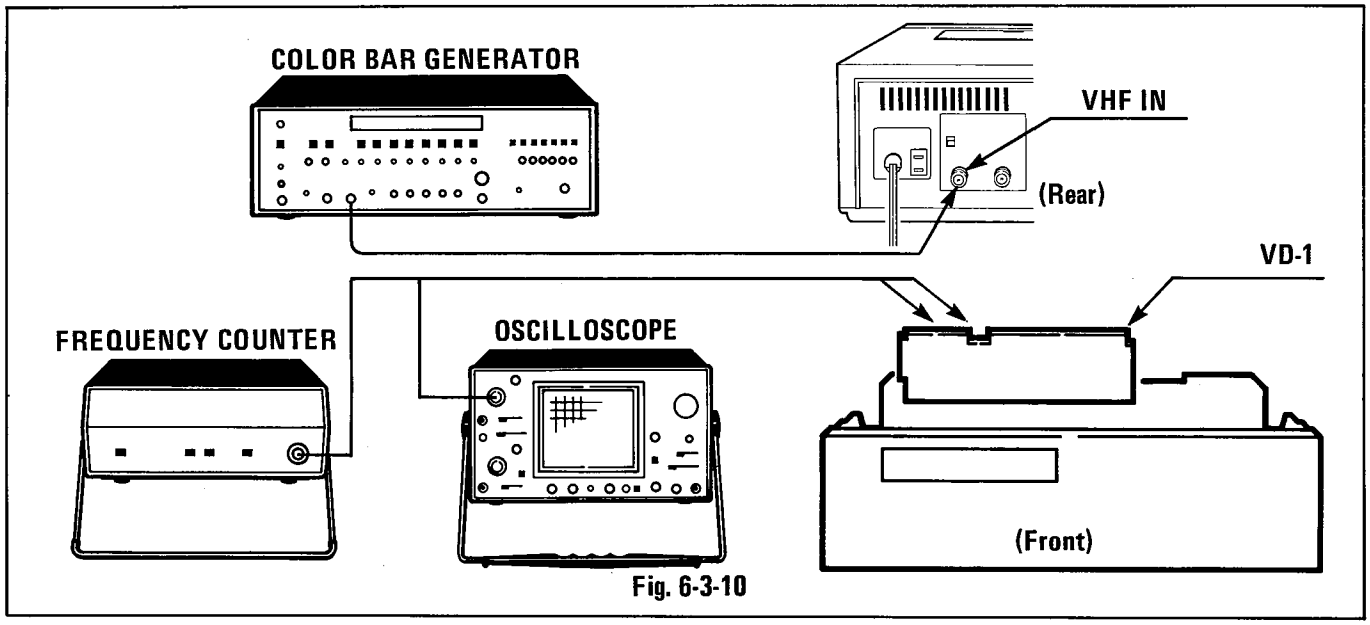
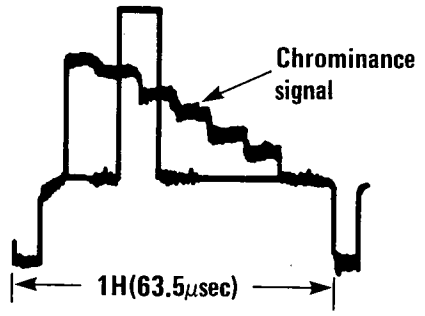


Fig. 6-3-10

3. COMB FILTER

Adjustment Location	SVR1013 T1009
Measuring Point	TP1006
Measuring Equipment	Color bar generator Oscilloscope
Conditions of Adjustment	E-E mode

(1) Input a color bar signal and put the VCR in the STOP mode.
(2) Connect an oscilloscope to TP1006.
(3) Alternately adjust SVR1013 and T1009 so that the level of the chrominance signal of the middle of the luminance signal is minimized (20mVp-p or less).



Comb filter

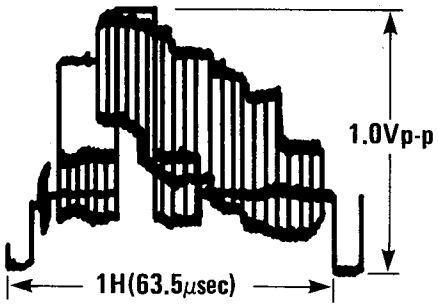
Fig. 6-3-11

4. E-E VIDEO OUTPUT LEVEL

Adjustment Location	SVR1010
Measuring Point	TP1011
Measuring Equipment	Color bar generator Oscilloscope
Conditions of Adjustment	E-E mode

(1) Input a color bar signal and put the VCR in the STOP mode.
(2) Connect an oscilloscope to TP1011.
(3) Adjust SVR1010 to get 1.00±0.05Vp-p.

(Caution)
The VIDEO OUT terminal should be terminated at 75ohms.



E-E video output level

Fig. 6-3-12

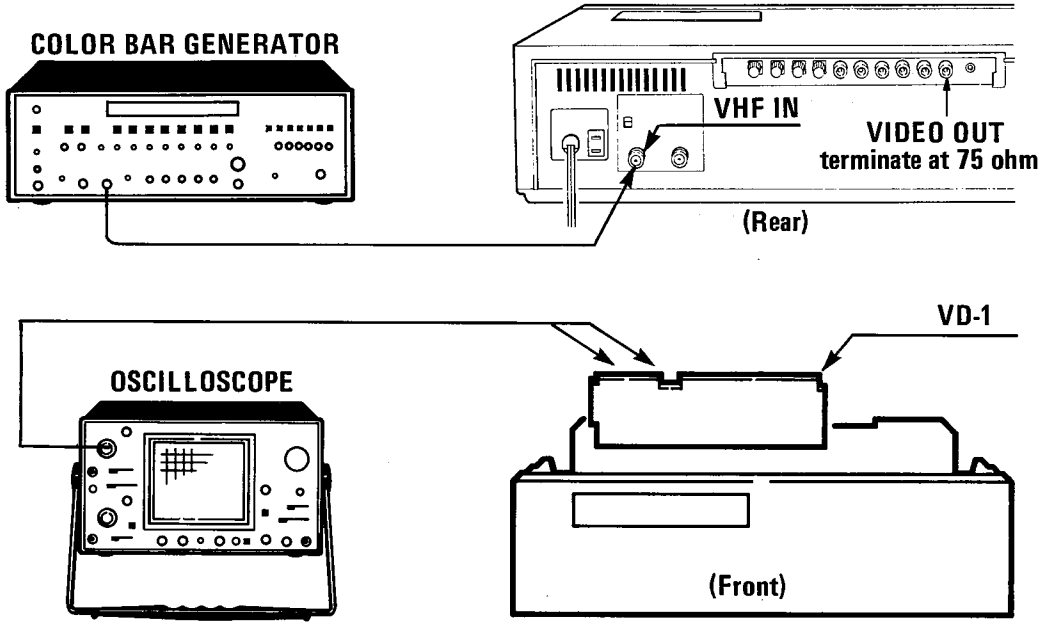
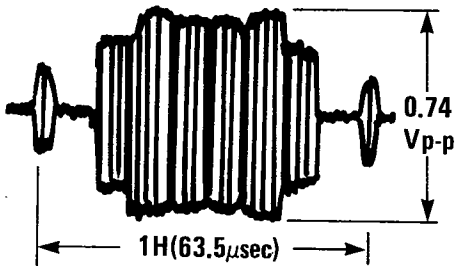


Fig. 6-3-13

5. A.C.C. LEVEL

Adjustment Location	SVR1015
Measuring Point	TP1002
Measuring Equipment	Color bar generator Oscilloscope
Conditions of Adjustment	E-E mode

(1) Input a color bar signal and put the VCR in the STOP mode.
(2) Connect an oscilloscope to TP1002.
(3) Adjust SVR1015 to get 0.74±0.02Vp-p.



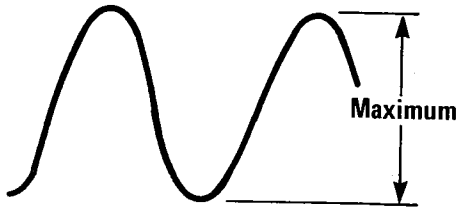
A.C.C. level

Fig. 6-3-14

6. 4.27MHz B.P.F.

Adjustment Location	T1002 T1003
Measuring Point	TP1001
Measuring Equipment	Color bar generator Oscilloscope
Conditions of Adjustment	E-E mode

(1) Input a color bar signal and put the VCR in the STOP mode.
(2) Connect an oscilloscope to TP1001.
(3) Adjust T1002 and T1003 so that the level of the 4.27MHz sine wave is maximized (0.5Vp-p or more).



4.27MHz B.P.F.

Fig. 6-3-15

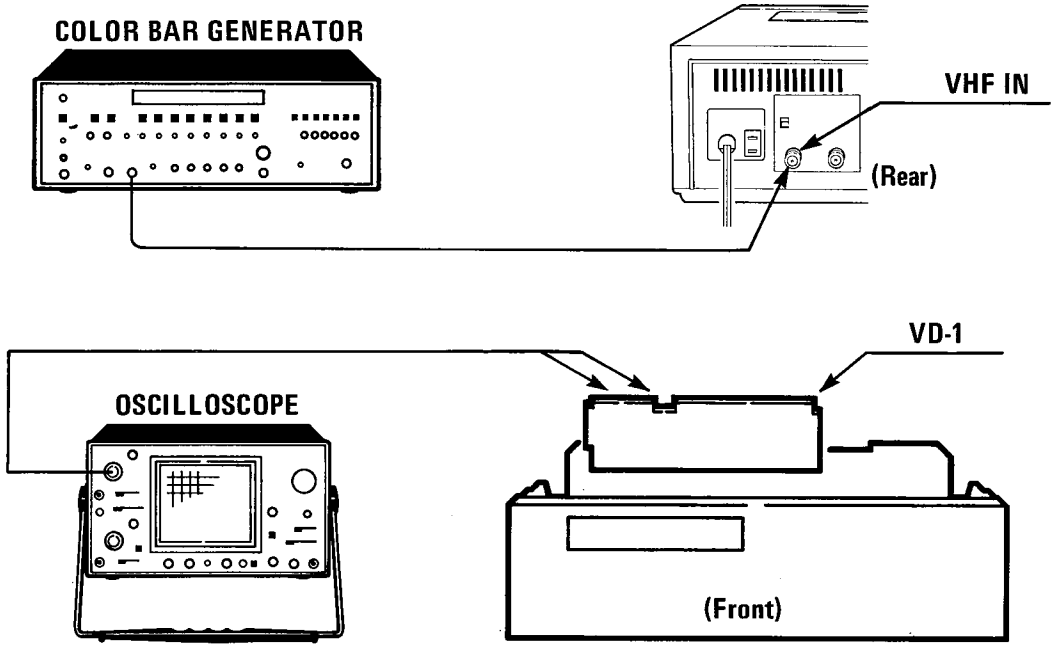
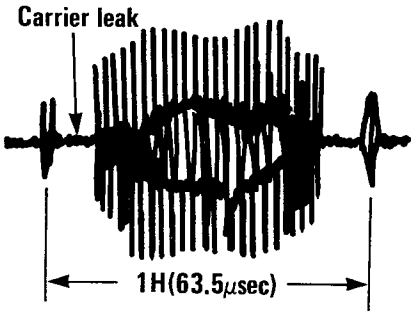


Fig. 6-3-16

7. CHROMINANCE SIGNAL (4.27MHz) CARRIER LEAK

Adjustment Location	SVR1014
Measuring Point	TP1012
Measuring Equipment	Color bar generator Oscilloscope
Conditions of Adjustment	E-E mode

(1) Input a color bar signal and put the VCR in the STOP mode.
(2) Connect an oscilloscope to TP1012.
(3) Adjust SVR1014 so that the 4.27MHz carrier component (level of leakage on base line) is minimized.



4.27MHz carrier leak

Fig. 6-3-17

8. (44-1/4)f_H V.C.O.

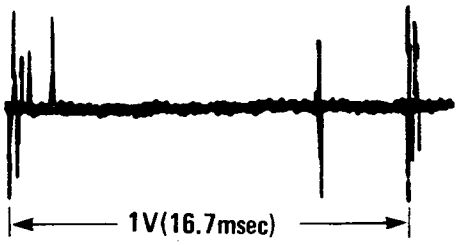
Adjustment Location	SVR1012
Measuring Point	TP1013
Measuring Equipment	Digital voltmeter Alignment tape
Conditions of Adjustment	PLAY mode

(1) Load the alignment tape. Playback a βII color bar signal.
(2) Connect a digital voltmeter to TP1013.
(3) Adjust SVR1012 to get DC 6.45±0.05V.

9. NOISE CANCELLER

Adjustment Location	SVR1007
Measuring Point	TP1009
Measuring Equipment	Oscilloscope Alignment tape
Conditions of Adjustment	PLAY mode

(1) Load the alignment tape. Playback a βII color bar signal.
(2) Connect an oscilloscope to TP1009.
(3) Adjust SVR1007 so that the output waveform is minimized (closest to linear).



Noise canceller (after adjustment)

Fig. 6-3-18

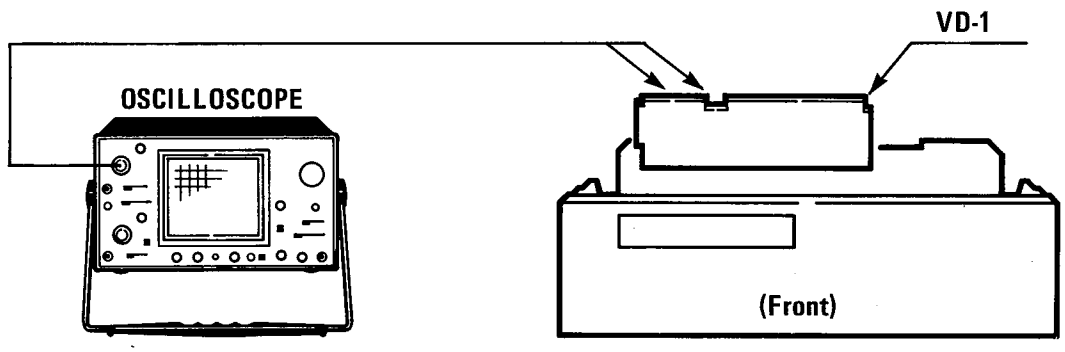


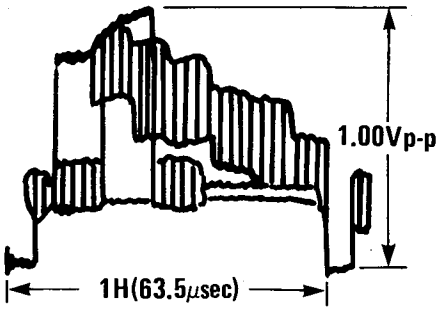
Fig. 6-3-19

10. LUMINANCE SIGNAL PLAYBACK LEVEL

Adjustment Location	SVR1006
Measuring Point	TP1011
Measuring Equipment	Oscilloscope Alignment tape
Conditions of Adjustment	PLAY mode

(1) Load the alignment tape. Playback a βII color bar signal.
(2) Connect an oscilloscope to TP1011.
(3) Adjust SVR1006 to get 1.00±0.04Vp-p.

(Caution)
The video output terminal should be terminated at 75ohms.



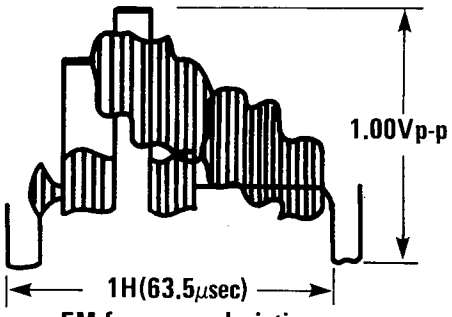
Luminance signal playback level

Fig. 6-3-20

11. FM FREQUENCY DEVIATION

Adjustment Location	SVR1009
Measuring Point	TP1011
Measuring Equipment	Oscilloscope
Conditions of Adjustment	REC mode

Perform this adjustment only after confirming that the luminance signal playback level adjustment (10.) has been completed.
Repeat the (12.) SYNC TIP CARRIER FREQUENCY adjustment and (11.) FM FREQUENCY DEVIATION adjustment alternately until both adjustment valves are satisfied.
(1) Load a cassette. Put the VCR in the βII or βIII TV REC mode.
(2) Connect an oscilloscope to TP1011.
(3) Adjust SVR1009 to get 1.00±0.05Vp-p.
(Caution)
The video output terminal should be terminated at 75 ohms.



FM frequency deviation

Fig. 6-3-21

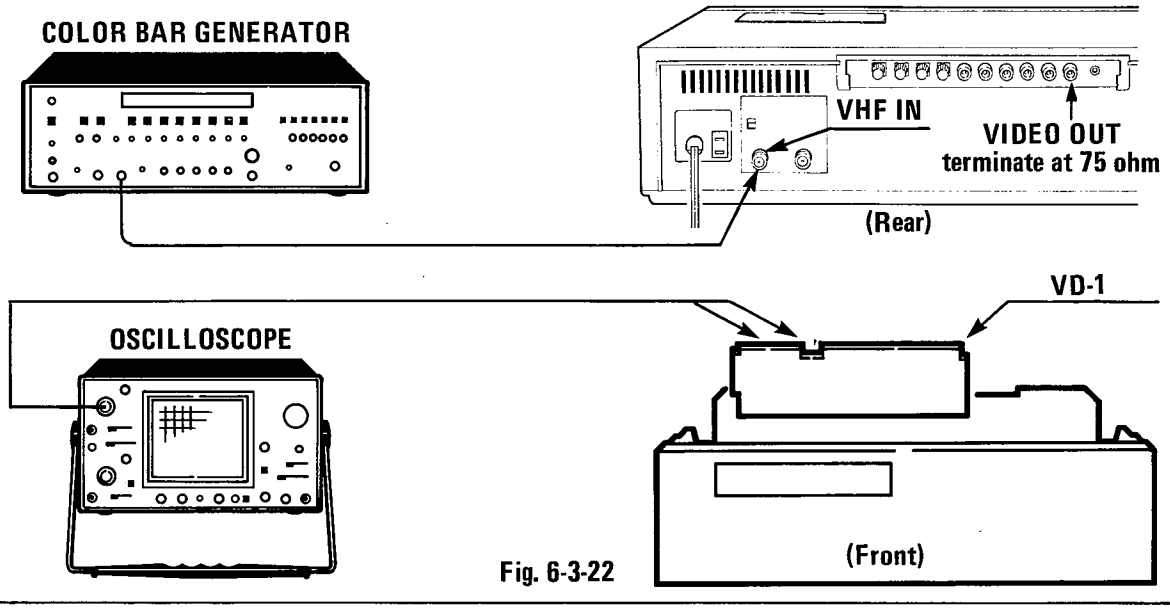


Fig. 6-3-22

12. SYNC TIP (1) CARRIER FREQUENCY(B HI-FI mode)

Adjustment Location	SVR1001
Measuring Point	TP1007
Measuring Equipment	Frequency counter
Conditions of Adjustment	E-E mode

(1) Set the REC MODE selector in the B HI-FI position.
(2) Under conditions of no-signal video input (VCR is in STOP mode.)
(3) Connect a frequency counter to TP1007.
(4) Adjust SVR1001 to get 4.05±0.02MHz.

(Caution)
The no-signal mode is obtained by connecting only a plug to the VIDEO IN terminal.

13. SYNC TIP (2) CARRIER FREQUENCY
(B HI-FI off mode.)

Adjustment Location	SVR1002
Measuring Point	TP1007
Measuring Equipment	Frequency counter
Conditions of Adjustment	E-E mode

(1) Set the REC MODE selector in the MONO position.
(2) Under conditions of no-signal video input (VCR is in STOP mode).
(3) Connect a frequency counter to TP1007.
(4) Adjust SVR1002 to get 3.73±0.03MHz.

(Caution)
The no-signal mode is obtained by connecting only a plug to the VIDEO IN terminal.

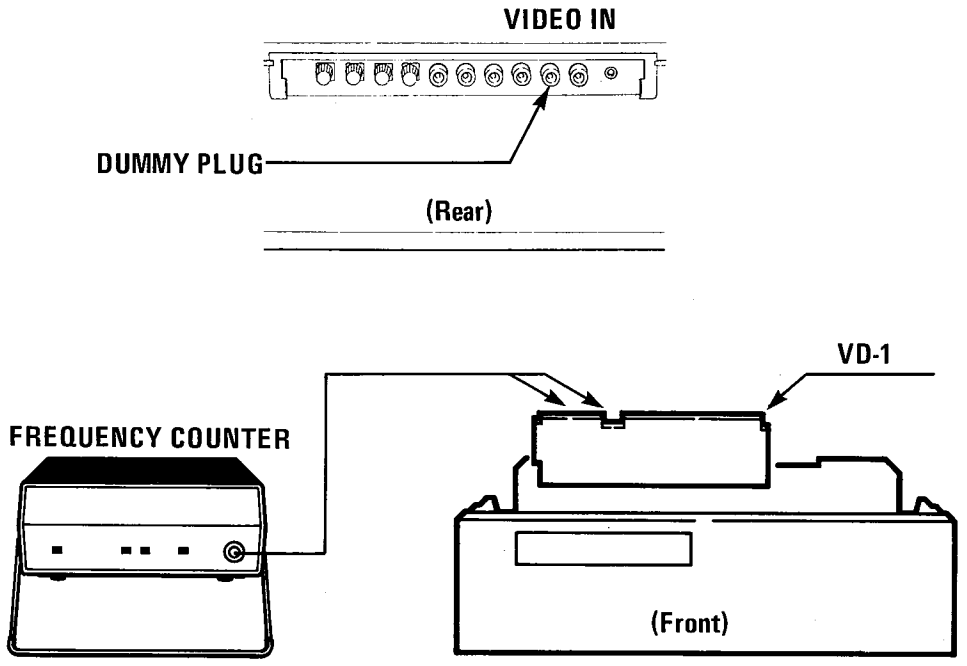
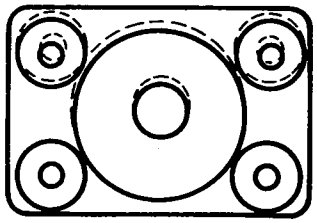


Fig. 6-3-23

14. SPECIAL PLAYBACK DUMMY V (VERTICAL) SYNC INSERT POSITION (See Fig. 6-2-14)

Adjustment Location	SVR4002
Measuring Point	TV screen
Measuring Equipment	Color TV monitor
Conditions of Adjustment	SP. PLAY

(1) Load a cassette. Record a TV broadcast at βIII.
(2) Playback the recorded portion, and put the VCR in the STILL mode.
(3) Adjust SVR4002 of the servo circuit (SY-1 board) so that the V jitter (very fine movement of the vertical sync) is minimized.



TV screen

Special playback dummy V sync insert position

Fig. 6-3-24

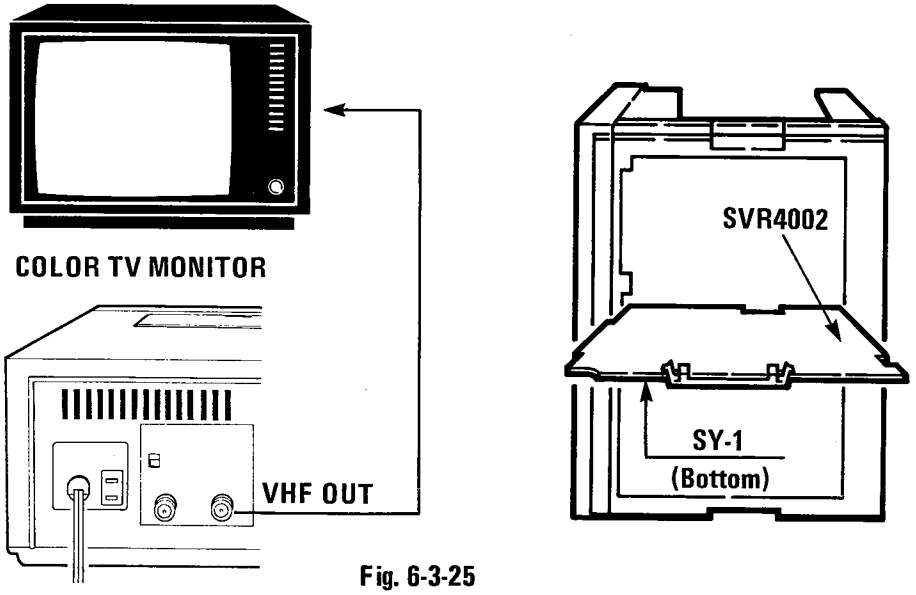


Fig. 6-3-25

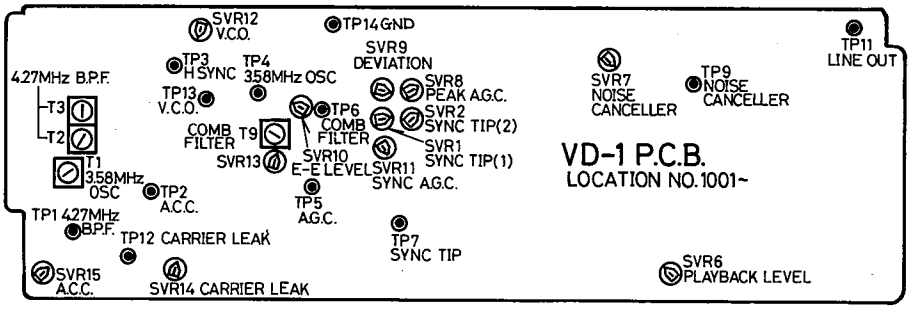


Fig. 6-3-26 Circuit Board VD-1 (Parts side view)

4. AUDIO CIRCUIT ADJUSTMENTS

(AUDIO B-HIFI SYSTEM ADJUSTMENTS)

(SETTING BEFORE ADJUSTMENT)
Unless specified otherwise, adjust as shown below.

- VIDEO INPUT terminal — Open circuit
- TAPE SPEED selector — βII position
- EXT AUDIO IN switch — ON position
- TRACKING control knob — Center (click stop) position
- AUDIO REC level selector — MAN position
- REC mode selector — STEREO position
- AUDIO OUT selector — STEREO position

(Caution)
The AUDIO OUT terminal should be terminated at 47 kohms. (Lch and Rch)

1. REFERENCE OSCILLATION FREQUENCY AND LEVEL CHECKS.

Adjustment Location	———
Measuring Point	TP2600 TP2601
Measuring Equipment	Frequency counter Oscilloscope
Conditions of Adjustment	E-E mode

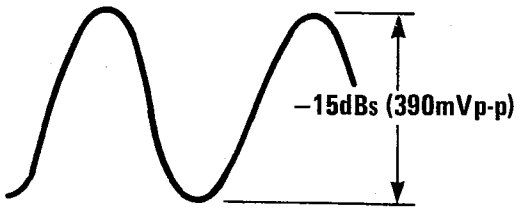
(1) Connect a frequency counter to TP2600.
(2) Check to be sure that there is an oscillation frequency of 597902±10Hz.
(3) Connect a frequency counter to TP2601.
(4) Check to be sure that there is an oscillation frequency of 448427±10Hz.
(5) Connect an oscilloscope to TP2600.
(6) Check to be sure that the reference level is 1600 ±300mVp-p.
(7) Connect an oscilloscope to TP2601.
(8) Check to be sure that the reference level is 1600 ±300mVp-p.

2. PLAYBACK LEVEL

Make this adjustment separately for Lch and Rch. The Rch adjustments are shown in parentheses.

Adjustment Location	SVR2200 (Lch) SVR2300 (Rch)
Measuring Point	TP2400 (Lch) TP2500 (Rch)
Measuring Equipment	AC voltmeter Oscilloscope
Conditions of Adjustment	PLAY mode

(1) Load the alignment tape, playback a B HI-FI 400Hz ±25kHz DEV. part.
(2) Connect the AC voltmeter to TP2400 (TP2500).
(3) Adjust SVR2200 (SVR2300) to get −15±0.1dBs.
(4) Connect an oscilloscope to TP2400 (TP2500).
(5) Check to be sure the sine wave without the pulse noise.



PLAYBACK LEVEL

Fig. 6-4-1

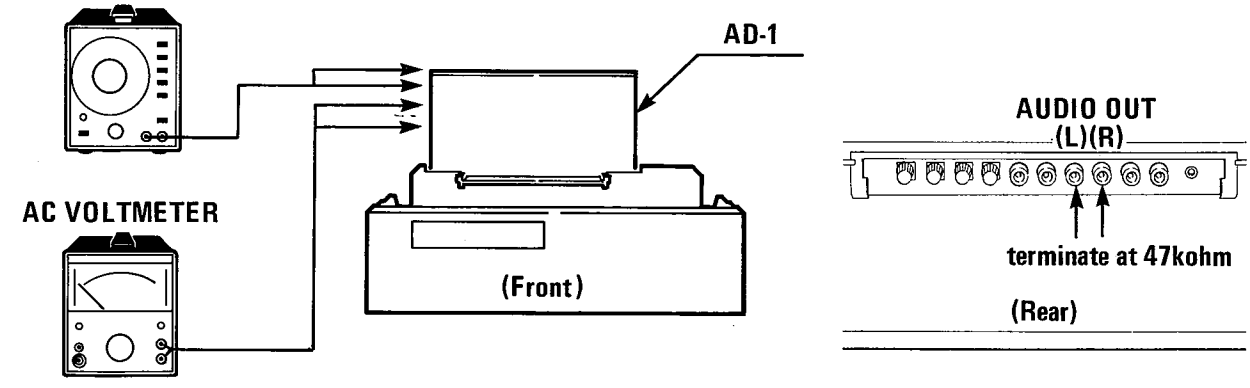


Fig. 6-4-2

3. NR LEVEL

Make this adjustment separately for Lch and Rch. The Rch adjustments are shown in parentheses.

Adjustment Location	SVR2400 (Lch) SVR2500 (Rch)
Measuring Point	TP2200 (Lch) TP2300 (Rch)
Measuring Equipment	AC voltmeter
Conditions of Adjustment	PLAY mode

(1) Load the alignment tape, playback a B HI-FI 400Hz ±25kHz DEV. part.
(2) Connect the AC voltmeter to TP2200 (TP2300).
(3) Adjust SVR2400 (SVR2500) to get −21.5±0.1dBs.
(4) Connect an oscilloscope to TP2200 (TP2300).
(5) Check to be sure the sine wave without the pulse noise.

4. MODULATION OSCILLATION FREQUENCY

Adjustment Location	T2400 (Lch) T2500 (Rch)
Measuring Point	TP2404 TP2504
Measuring Equipment	Frequency counter
Conditions of Adjustment	E-E mode

(1) Set the REC VOLUME controls minimized position and AUDIO OUT (Lch and R ch) terminals Short or open-circuit.
(2) Connect a frequency counter to TP2404.
(3) Adjust T2400 to get 1978.6±1kHz.
(4) Connect a frequency counter to TP2504.
(5) Adjust T2500 to get 2277.5±1kHz.
(6) Connect an oscilloscope to TP2404 and TP2504.
(7) Check to be sure that the level is 1.5±0.2vp-p.

5. CARRIER LEVEL

Adjustment Location	SVR2403 (f1) SVR2404 (f2) SVR2503 (f3) SVR2504 (f4)
Measuring Point	TP2405 (f1) TP2406 (f2) TP2505 (f3) TP2506 (f4)
Measuring Equipment	Frequency counter Oscilloscope
Conditions of Adjustment	E-E mode

(1) Set the REC VOLUME controls minimized position and AUDIO OUT (Lch and Rch) terminals short or open-circuit.
(2) Connect an oscilloscope to TP2405 and adjust SVR2403 to get 95±5mVp-p.
(3) Connect the frequency counter to TP2405 and check to be sure the carrier frequency (f1) is 1.380682MHz±2kHz.
(4) Connect an oscilloscope to TP2406 and adjust SVR2404 to get 100±5mVp-p.
(5) Connect the frequency counter to TP2406 and check to be sure the carrier frequency (f2) is 1.530157MHz±2kHz.
(6) Connect an oscilloscope to TP2505 and adjust SVR2503 to get 105±5mVp-p.
(7) Connect the frequency counter to TP2505 and check to be sure the carrier frequency (f3) is 1.679633MHz ±2kHz.
(8) Connect an oscilloscope to TP2506 and adjust SVR2504 to get 105±5mVp-p.
(9) Connect the frequency counter to TP2506 and check to be sure the carrier frequency (f4) is 1.829108MHz ±2kHz.

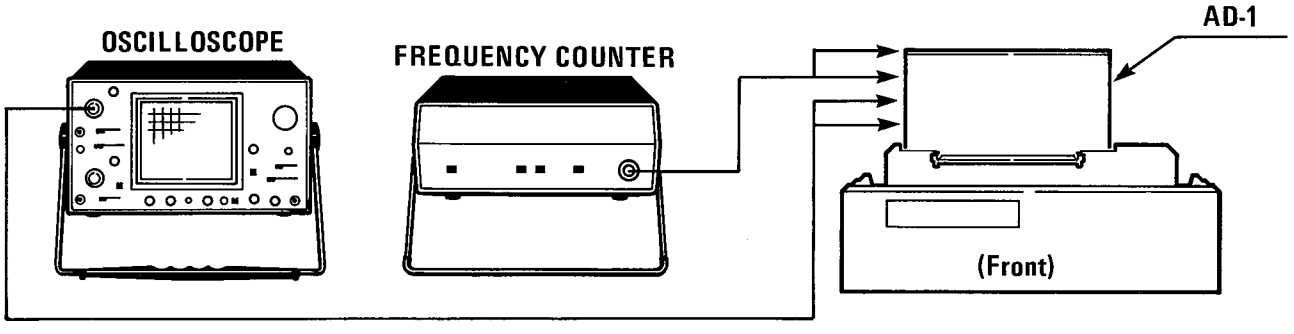


Fig. 6-4-3

6. NR COMPRESSOR CHECKS

Make this adjustment separately for Lch and Rch. The Rch adjustments are shown in parentheses.

Adjustment Location	———
Measuring Point	TP2401 (Lch) TP2501 (Rch)
Measuring Equipment	AC voltmeter Audio frequency oscillator
Conditions of Adjustment	E-E mode

(1) Connect the audio frequency oscillator to the TP2400 (TP2500), and set for an oscillation output of 400Hz, −21.5dBs, sinewave.
(2) connect the AC voltmeter to the TP2401 (TP2501).
(3) Check to be sure that the level is −15±0.1dBs.

7. LIMITER LEVEL

Make this adjustment separately for Lch and Rch. The Rch adjustments are shown in parentheses.

Adjustment Location	SVR2401 (Lch) SVR2501 (Rch)
Measuring Point	TP2402 (Lch) TP2502 (Rch)
Measuring Equipment	AC voltmeter Audio frequency oscillator
Conditions of Adjustment	E-E mode

(1) Connect the audio frequency oscillator to the TP2400 (TP2500), and set for an oscillation output of 400Hz, −5dBs, sine wave.
(2) Connect the AC voltmeter to the TP2402 (TP2502).
(3) Adjust SVR2401 (SVR2501) to get 2.9Vp-p.

(Caution)
Check to be sure that the sine wave clipped.

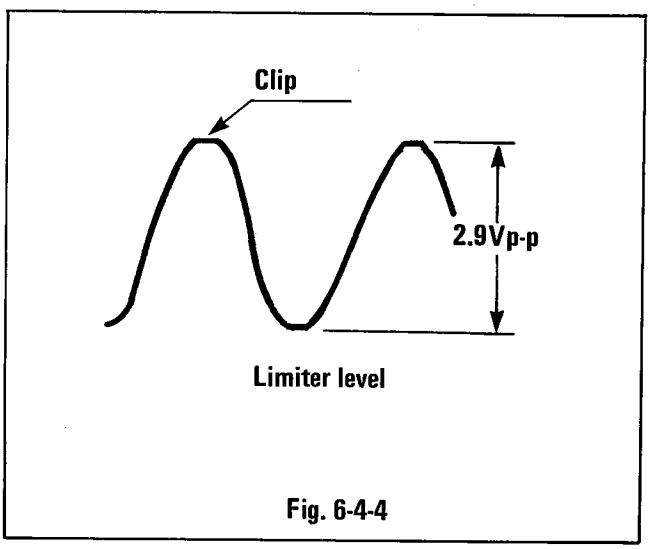


Fig. 6-4-4

8. MODULATION LEVEL

Make this adjustment separately for Lch and Rch. The Rch adjustments are shown in parentheses.

Adjustment Location	SVR2402 (Lch) SVR2502 (Rch)
Measuring Point	TP2403 (Lch) TP2503 (Rch)
Measuring Equipment	AC voltmeter Audio frequency oscillator
Conditions of Adjustment	E-E mode

(1) Connect the audio frequency oscillator to the TP2400 (TP2500), and set for an oscillation output of 400Hz, −21.5dBs, sine wave.
(2) Connect the AC voltmeter to the TP2403 (TP2503).
(3) Adjust SVR2402 (SVR2502) to get −31dBs.
(4) Load a cassette. Put the VCR in the REC mode.
(5) Playback the recorded part, and check to be sure that the modulation level is −15±0.2dBs.
(6) If the modulation level is not −15±0.2dBs, adjust SVR2402 (SVR2502), record once again, and play it back for confirmation.

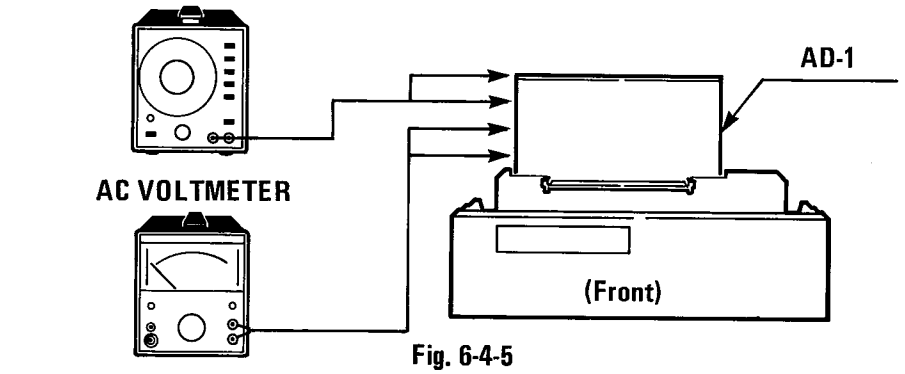


Fig. 6-4-5

9. RECORD/PALYBACK DISTORTION CHECK

Make this check separately for Lch and Rch. The Rch checks are shown in parentheses.

Adjustment Location	———
Measuring Point	AUDIO OUT terminal
Measuring Equipment	Audio frequency oscillator Distortion meter
Conditions of Adjustment	REC/PLAY mode

(1) Set the REC VOLUME controls maximized.
(2) Connect the audio frequency oscillator to the AUDIO IN Lch (Rch) terminal, and set for an oscillation output of 400Hz, –10dBs, sine wave.
(3) Connect the distortion meter to the AUDIO OUT Lch (Rch) terminal.
(4) Load a cassette. Put the VCR in the REC mode.
(5) Playback the cassette recorded, and check to be sure that the distortion level is THD 0.3% or less.

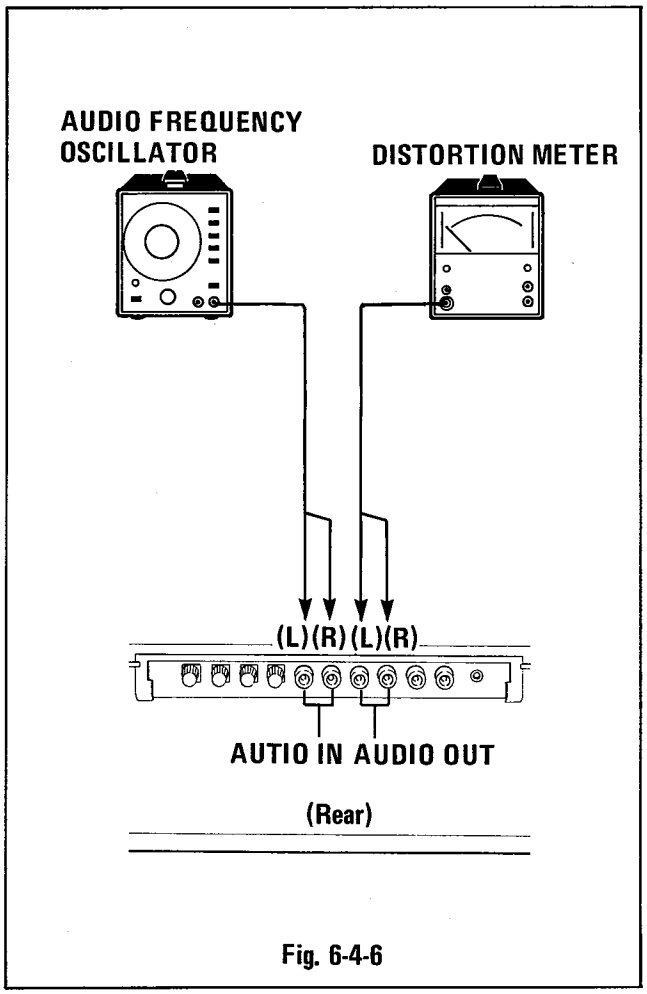


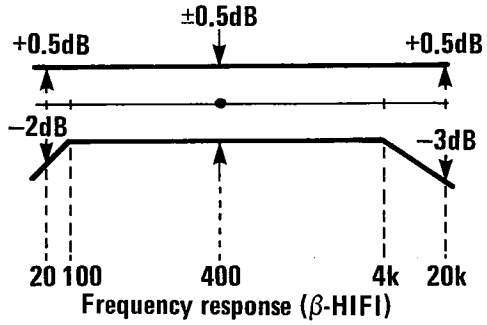
Fig. 6-4-6

10. OVERALL FREQUENCY RESPONCE CHECK

Make this check separately for Lch and Rch. The Rch checks are shown in parentheses.

Adjustment Location	———
Measuring Point	AUDIO OUT terminal
Measuring Equipment	AC voltmeter Audio frequency oscillator
Conditions of Adjustment	REC/PLAY mode

(1) Set the REC VOLUME controls maximized.
(2) Connect the audio frequency oscillator to the AUDIO IN Lch (Rch) terminal, and set for an oscillation output of 400Hz, –30dBs, sine wave.
(3) Connect the AC voltmeter to the AUDIO OUT Lch (Rch) terminal.
(4) Load a cassette. Put the VCR in the REC mode.
(5) Set the oscillation frequency of the audio frequency oscillator as shown in the figure below, and make a recording of each for about 10 seconds.
(6) Playback the cassette recorded, and check to be sure that the playback output level of each frequency is within the standard range shown in the figure below.



Frequency response (β-HIFI)

Fig. 6-4-7

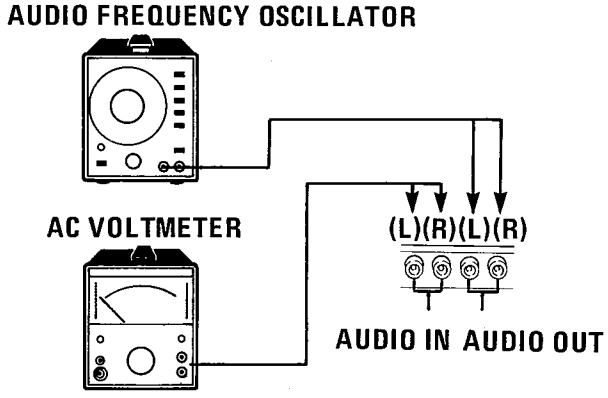


Fig. 6-4-8

(AUDIO NORMAL SYSTEM ADJUSTMENTS)

1. BIAS LEVEL AND OSCILLATION FREQUENCY CHECK

Adjustment Location	SVR2001
Measuring Point	TP3801 TP3802
Measuring Equipment	AC voltmeter Frequency counter
Conditions of Adjustment	REC mode

(1) Load a cassette. Put the VCR in the no-signal REC mode.
(2) Connect the AC voltmeter to TP3801 and TP3802.
(3) Adjust SVR2001 to get 17mVrms.
(4) Connect a frequency counter to TP3801 and TP3802.
(5) Check to be sure that there is an oscillation frequency of 70±5kHz.

(Cautions)
- The no-signal REC mode is obtained by connecting only a plug to the AUDIO IN terminal, and then putting the VCR in the REC mode while thus interrupting the input signal.
- The AC voltmeter and frequency counter are connected as follows:
  Measurement probe: TP3801
  Ground probe: TP3802

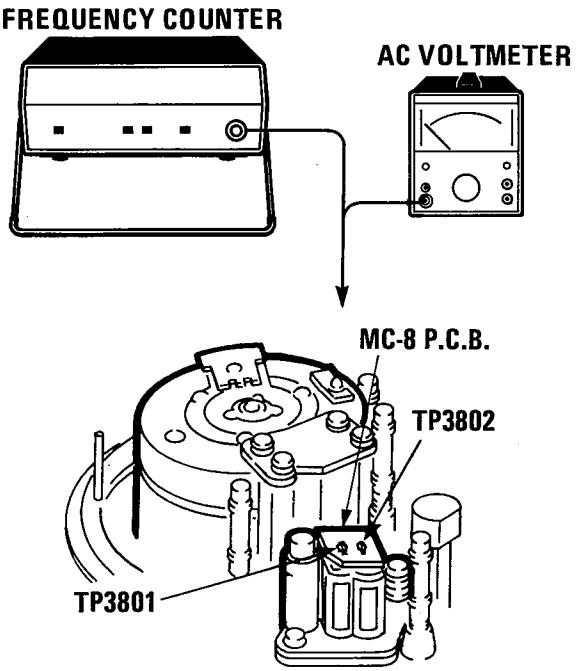


Fig. 6-4-9

2. A.L.C. OUTPUT CHECK

Adjustment Location	———
Measuring Point	AUDIO OUT terminal
Measuring Equipment	Audio frequency oscillator AC voltmeter
Conditions of Adjustment	E-E mode

(1) Connect the audio frequency oscillator to the AUDIO IN (Lch and Rch) terminals, and set for an oscillation output of 1kHz, −10dBs, sine wave.
(2) Connect the AC voltmeter to the AUDIO OUT (Lch and Rch) terminals.
(3) Wait for the reference input in item (1) to stabilize, and then set each input level relative to the reference input as described below, and check to be sure that the standard is satisfied.

Input level	Output level
+20dB	−9.7±2dBs
±0dB	−10±1.5dBs
−20dB	−16±4dBs

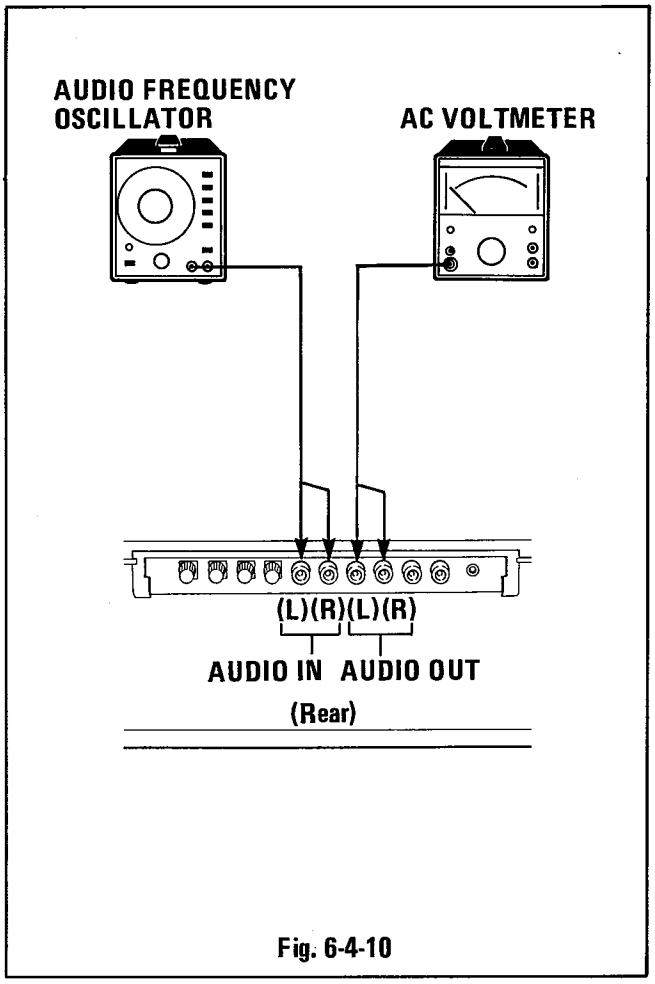


Fig. 6-4-10

3. RECORDING CURRENT LEVEL CHECK

Adjustment Location	———
Measuring Point	TP3801 TP3802
Measuring Equipment	Audio frequency oscillator AC voltmeter
Conditions of Adjustment	REC mode

(1) Connect the audio frequency oscillator to the AUDIO IN terminal, and set for an oscillation output of 1kHz, −10dBs, sine wave.
(2) Connect the AC voltmeter to TP3801 and TP3802.
(3) Short-circuit between TP2001 and TP2002 and stop the bias.
(4) Load a cassette. Put the VCR in the βII REC mode.
(5) Check to be sure that the recording current level of 3.0 ±0.5mVrms (30 ±5μA).

4. OVERALL FREQUENCY RESPONSE CHECK

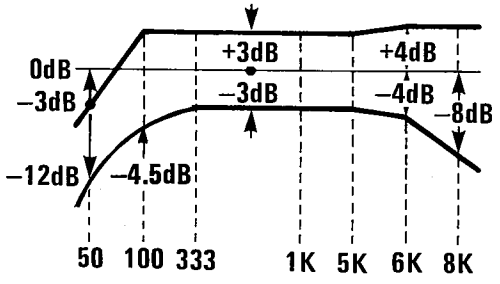
Adjustment Location	———
Measuring Point	AUDIO OUT terminal
Measuring Equipment	Audio frequency oscillator AC voltmeter
Conditions of Adjustment	REC/PLAY mode

(1) Connect the audio frequency oscillator to the AUDIO IN terminal, and set for an oscillation output of 1kHz, −10dBs, sine wave.
(2) Connect the AC voltmeter to the AUDIO OUT terminal.
(3) Wait for the reference input in item (1) to stabilize, and then reduce the input level 30dB relative to reference input.
(4) Load a cassette. Put the VCR in the βII or βIII REC mode.
(5) Set the oscillation frequency of the audio frequency oscillator as shown in the figure at the right, and make a recording of each for about 10 seconds.

(6) Playback the cassette recorded at βII or βIII, and check to be sure that the playback output level of each frequency is within the standard range shown in the figure below.

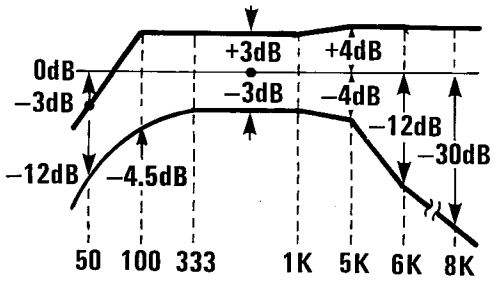
(Caution)
If the output level of the high frequency range (6kHz or higher) is not within the reference range (βII or βIII frequency response), readjust the bias level as described below:

- If the upper limit of the high frequency range is not satisfied:
  Raise the bias level to 19mVrms.
- If the lower limit of the high frequency range is not satisfied:
  Lower the bias level to 14mVrms.



Frequency response (βII)

Fig. 6-4-11



Frequency response (βIII)

Fig. 6-4-12

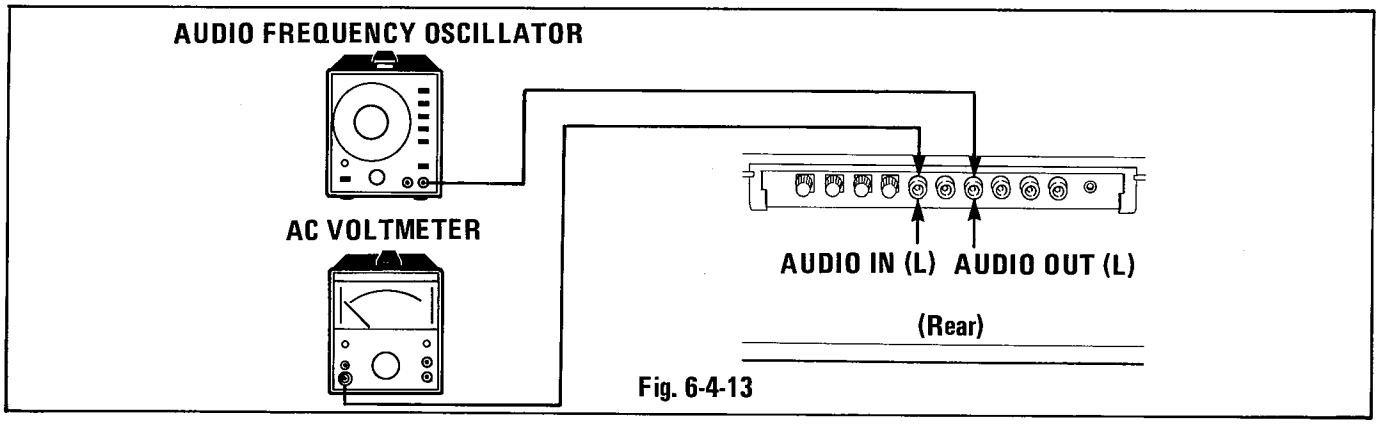


Fig. 6-4-13

5. RECORDING/PLAYBACK OUTPUT

Adjustment Location	SVR2002
Measuring Point	AUDIO OUT terminal
Measuring Equipment	Audio frequency oscillator AC voltmeter
Conditions of Adjustment	REC/PLAY mode

(1) Connect the audio frequency oscillator to the AUDIO IN terminal, and set for an oscillation output of 1kHz, −10dBs.
(2) Connect the AC voltmeter to the AUDIO OUT terminal.
(3) Wait for the reference input in item (1) to stabilize, and then put the VCR in the βII REC mode.
(4) Adjust SVR2002 so that the recorded 1kHz output level becomes −10dBs in the PLAY mode.
(5) Check, by following items (1) through (3) above, to be sure that the playback output level of a βIII recording is −10±2dBs.

6. PLAYBACK AUDIO LEVEL CHECK

Adjustment Location	———
Measuring Point	AUDIO OUT terminal
Measuring Equipment	AC voltmeter Alignment tape (VJ-0126)
Conditions of Adjustment	PLAY mode

(1) Playback the alignment tape (VJ-0126 ... βII, 333Hz recording level → Reference level ±0.5dB).
(2) Connect the AC voltmeter to the AUDIO OUT terminal.
(3) Check to be sure that the βII audio playback level is −10±3dBs.

7. S/N RATIO CHECK

Adjustment Location	———
Measuring Point	AUDIO OUT terminal
Measuring Equipment	Audio frequency oscillator AC voltmeter
Conditions of Adjustment	REC/PLAY mode

(1) Connect the audio frequency oscillator to the AUDIO IN terminal, and set for an oscillation output of 1kHz, −10dBs.
(2) Connect the AC voltmeter to the AUDIO OUT terminal.
(3) Wait for the reference input in item (1) to stabilize, and then put the VCR in the βII REC mode.
(4) After recording a 1kHz signal for about 5 digits on the tape counter, cut the input signal and then record the no-input signal in the same way for about 5 digits.

(Caution)
A no-input signal is obtained by inserting a short plug in the audio input terminal and reducing the VCR noise level.

(5) Playback the recorded part of the tape.
(6) Check to be sure that the difference between the 1kHz signal level and the noise level is 38dB or more.
(7) In the same way, measure the S/N ratio at βIII, and check to be sure that it is 37dB or more.

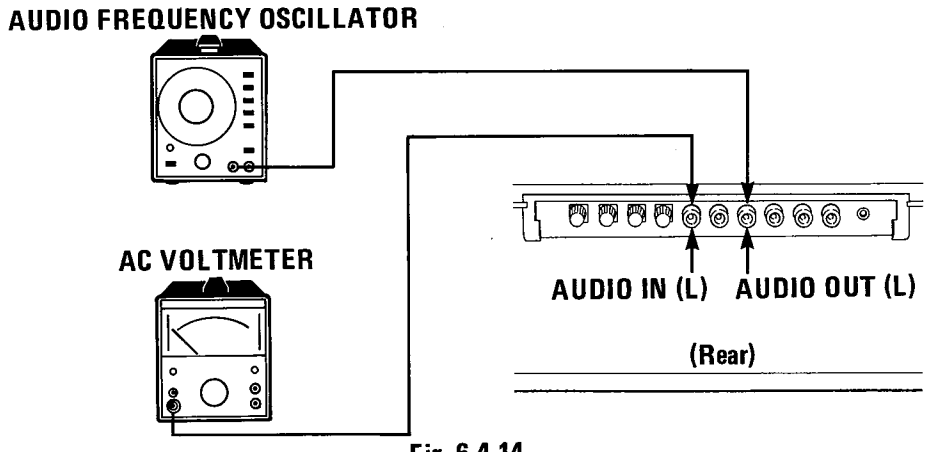
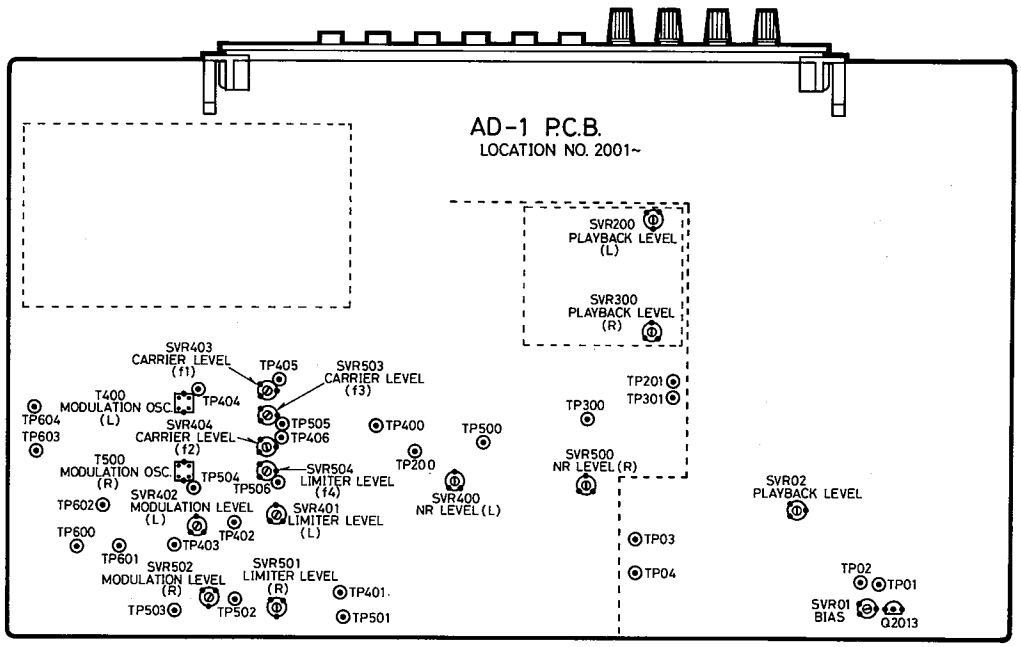
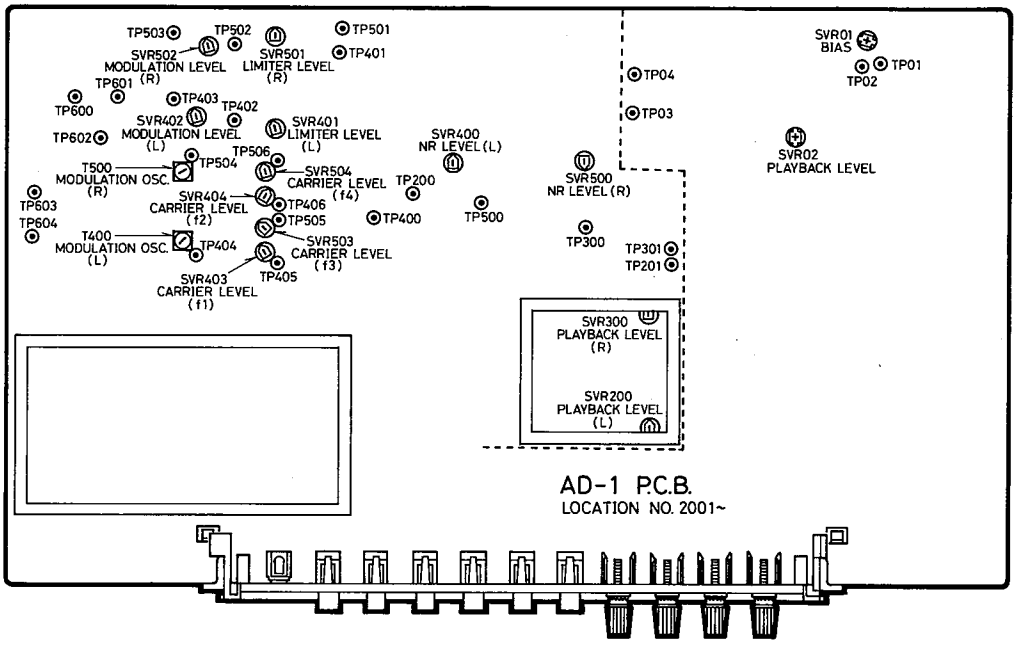


Fig. 6-4-14



(Foil side view)



(Parts side view)

Fig. 6-4-15 Circuit Board AD-1

5. AUDIO LEVEL METER CIRCUIT ADJUSTMENTS

1. LEVEL METER

(SETTING BEFORE ADJUSTMENT)

- REC MODE selector B HI-FI position
- AUDIO REC level selector MAN position

Make this adjustment separately for Lch and Rch. The Rch adjustments are shown in parentheses.

Adjustment Location	SVR2701 (Lch) SVR2702 (Rch)
Measuring Point	AUDIO OUT terminal
Measuring Equipment	AC voltmeter Audio frequency
Conditions of Adjustment	E-E mode

(1) Connect an audio generator to the AUDIO IN Lch (Rch) terminal and AC voltmeter to the AUDIO OUT terminal.
(2) Adjust the oscillation output to −10dBs, 1kHz using the audio generator and REC VOLUME controls.
(3) Adjust SVR2701(SVR2702) so that four of the green LEDs on the LEVEL meter illuminate.
(4) Set the oscillation output of the AUDIO OUT terminal to −10.5dBs, 1kHz, and confirm that only the fourth LED goes out.

(Caution)
If the LED does not go out, perform the adjustment again from item (2).

(5) Increase the oscillation output and set the AUDIO OUT terminal oscillation output to −2dBs, 1kHz, and them confirm that one red LED on the LEVEL meter illuminate.
(6) Set the oscillation output of the AUDIO OUT terminal to −4.5dBs, 1kHz, and confirm that only the red LED goes out.

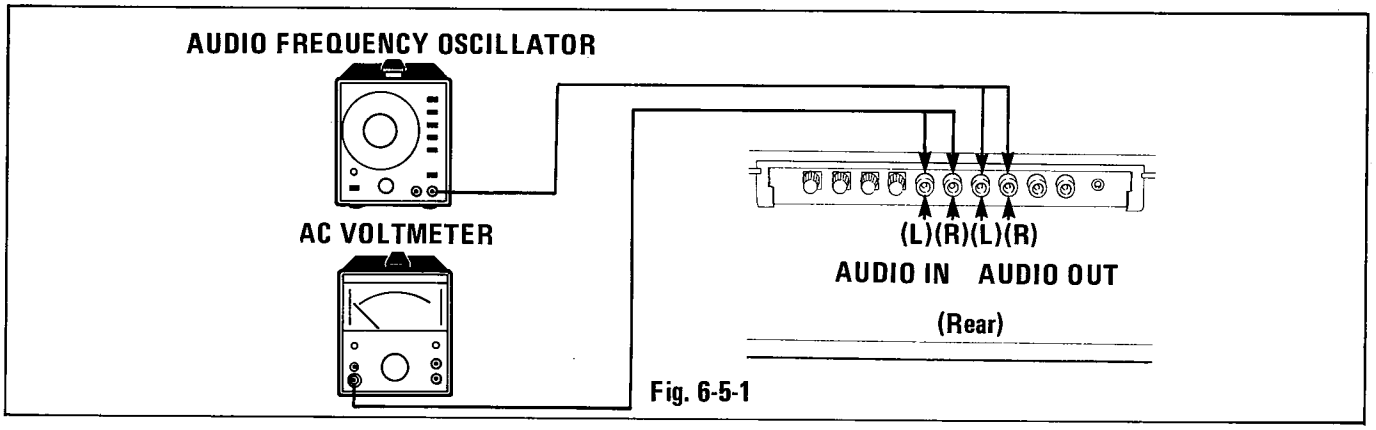


Fig. 6-5-1

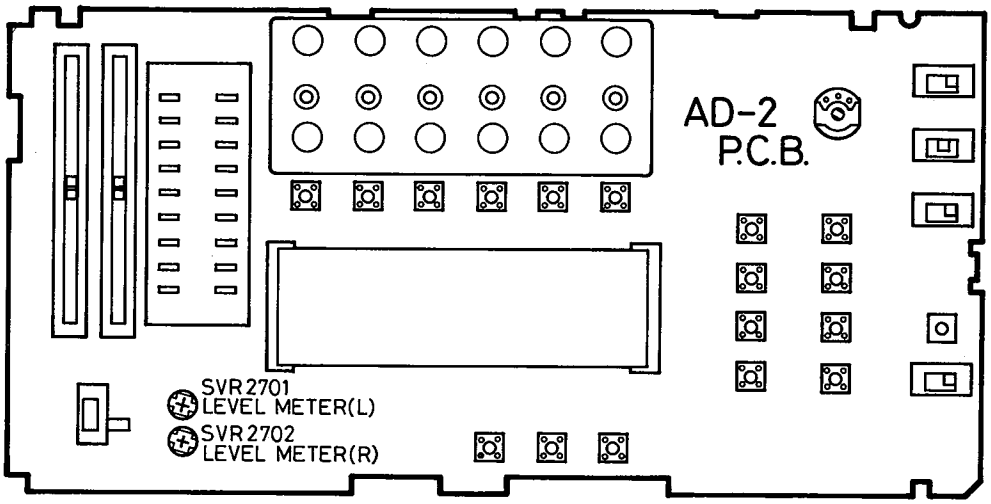


Fig. 6-5-2 Circuit Board AD-2 (Parts side view)

6. TUNER CIRCUIT ADJUSTMENT

1. RF A.G.C.

Adjustment Location	SVR6101
Measuring Point	TV screen
Measuring Equipment	Color TV monitor
Conditions of Adjustment	E-E mode

(1) Tune to any TV broadcast.
(2) Turn SVR6101 all the way to the right (looking from the parts surface).
(3) While watching the TV screen, turn SVR6101 slowly to the left (counter clockwise) and adjust it to the point where S/N is best point.
(4) Switch the tuning switch to receive each of the TV broadcasts to which the VCR has been preset.
(5) Observe the TV screen for each TV broadcast, and check to be sure that there is no beat and no saturation.

(Caution)
If any of the above conditions are recognized on the TV screen, readjust SVR6101.

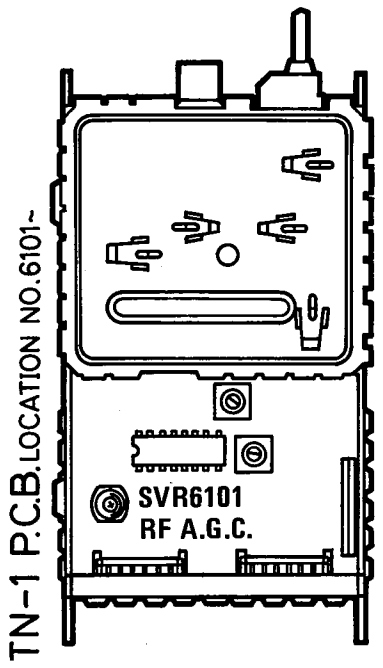


Fig. 6-6-1 Circuit Board TN-1 (Parts side view)

SANYO ELECTRIC INC.
SANYO CANADA INC.

Dec./'83/5500 HA Printed in Japan

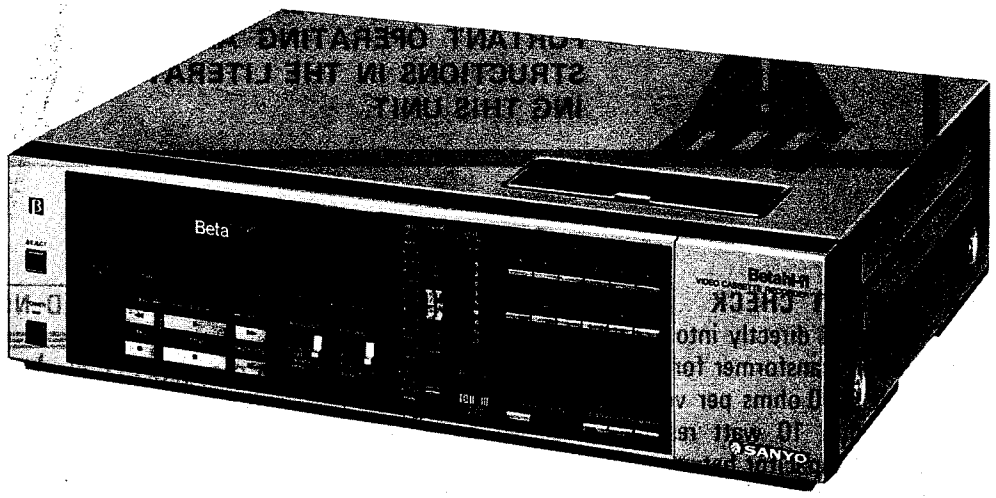
PARTS LIST & CIRCUIT DIAGRAMS

COLOR VIDEO CASSETTE RECORDER

SANYO

VCR7200

Beta



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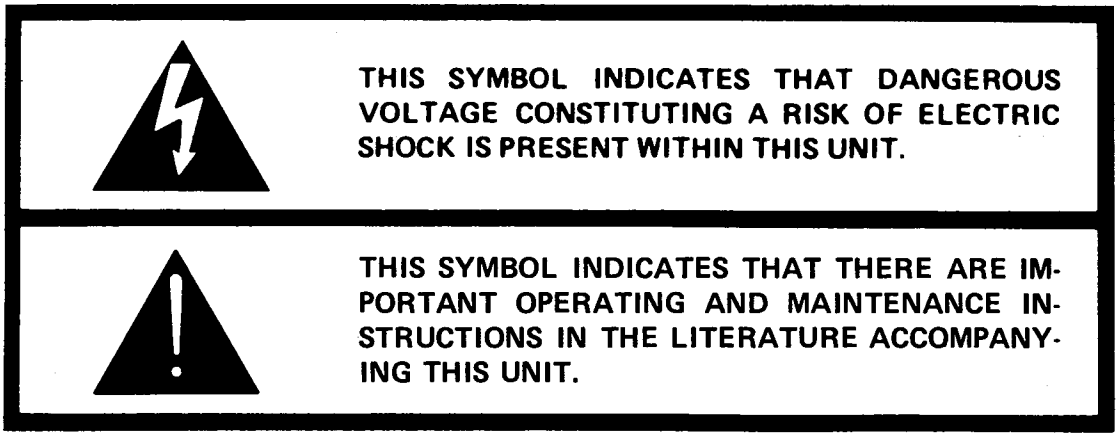
CIRCUIT DIAGRAMS



THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THIS UNIT.

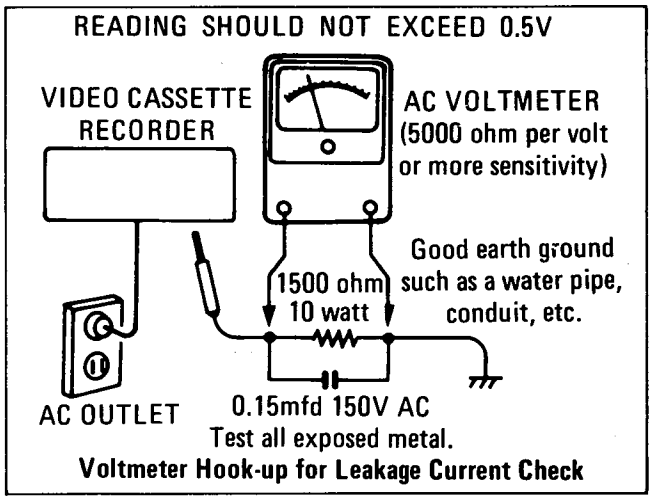
THIS SYMBOL INDICATES THAT THERE ARE IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THIS UNIT.

SAFETY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000 ohms per volt or more sensitivity. Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 mfd 150V AC capacitor between a known good earth ground (waterpipe, conduit, etc.) and all exposed metal parts of the cabinet (antennas, handle bracket, metal cabinet, screwheads, metal overlays, control shafts, etc.). Measure the AC voltage across the 1500 ohm resistor. The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.5 volts. A reading exceeding 0.5 volts indicates that a dangerous potential exists, the fault must first be located and corrected.

Repeat the above test with the VCR power plug reversed. NEVER RETURN A VCR TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.


READING SHOULD NOT EXCEED 0.5V
VIDEO CASSETTE RECORDER
AC VOLTMETER (5000 ohm per volt or more sensitivity)
Good earth ground such as a water pipe, conduit, etc.
1500 ohm 10 watt
AC OUTLET
0.15mfd 150V AC
Test all exposed metal.

Voltmeter Hook-up for Leakage Current Check

PRODUCT SAFETY NOTICE

The components designated by a symbol (⚠) in this schematic diagram designates components whose value are of special significance to product safety. Should any component designated by a symbol need to be replaced, use only the part designated in the Parts List. Do not deviate from the resistance, wattage and voltage ratings shown.

NOTE : Parts order must contain Model Number, Part Number and Description.

ACCESSORIES

Ref. No.	Parts No.	Description
	143 6 411T 44200	OWNER'S MANUAL
	143 6 411T 27200	IMPORTANT SAFEGUARDS
	4 243V 38000	75-OHM COAXIAL CABLE
	4 243V 51700	300-OHM TWIN-LEAD
	4 282V 10600	MATCHING TRANS.(300-75)
or	4 282V 11800	MATCHING TRANS.(300-75)
	4 282V 11600	MATCHING TRANS.(75-300)
	143 2 289T 09200	CHANNEL NUMBER SHEET
	143 9 4100 54580	IR REMOTE CONTROL UNIT(S)
or	143 9 4100 54582	IR REMOTE CONTROL UNIT(B)

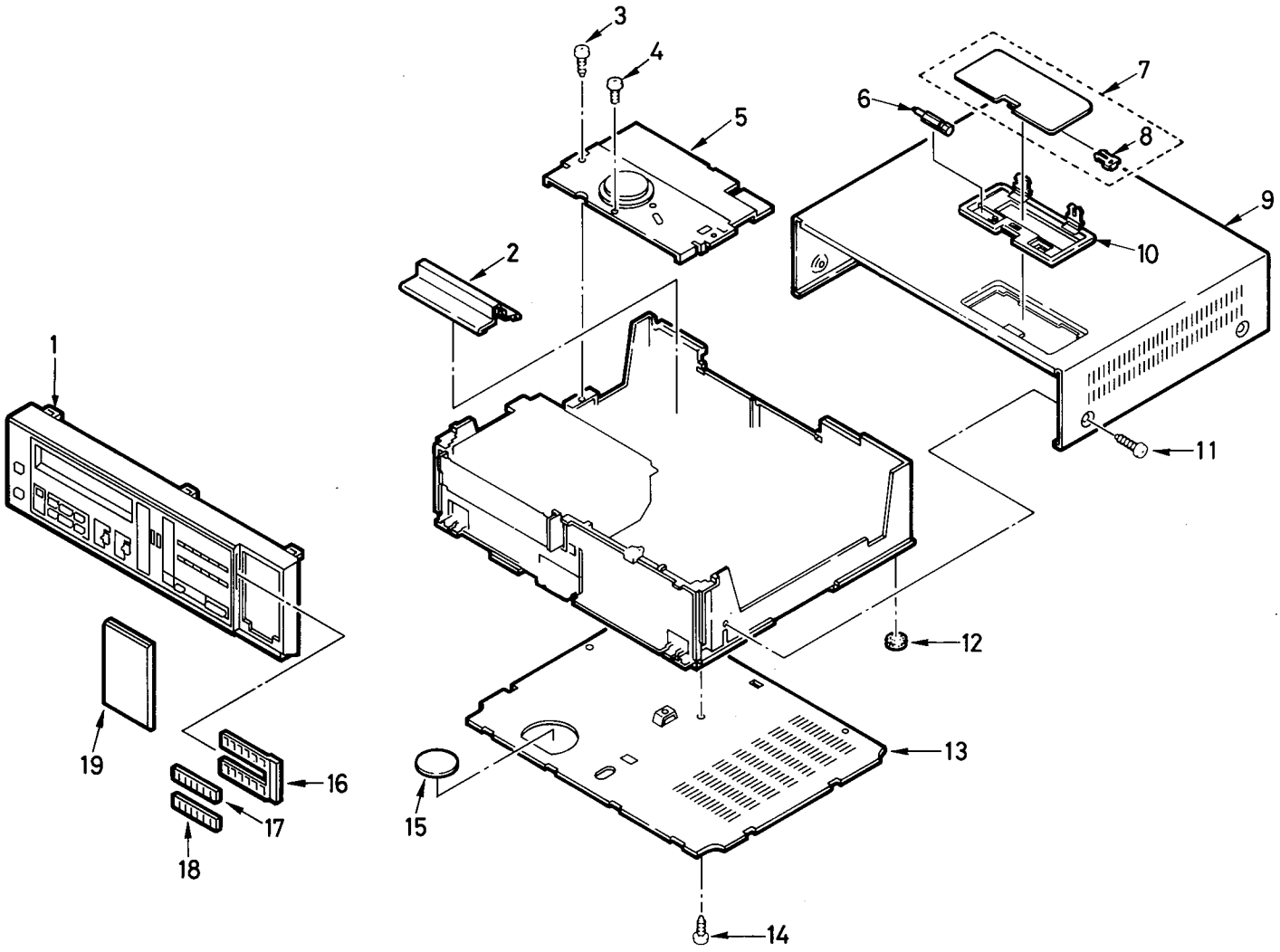
PACKING MATERIALS

Ref. No.	Parts No.	Description
	143 6 132T 37300	INNER CARTON(S)
or	143 6 132T 37303	INNER CARTON(B)
	143 6 251T 04000	INDIVIDUAL POLY.COVER
	143 6 144T 09200	PAD, LEFT
	143 6 144T 09300	PAD, RIGHT

CABINET PARTS

Ref. No.	Parts No.	Description
1	143 0 122T 21000	FRONT PANEL(S)
or	143 0 122T 21001	FRONT PANEL(B)
2	143 2 322T 38600	LOWER SHIELD PLATE
3	BJB2S++310+Z1	S T BIND H 3X10Z1
4	BJBYS++3+4+Z1	S M BIND H 3X4Z1
5	143 2 322T 36900	UPPER SHIELD PLATE
6	143 2 198T 00100	BAND SELECTOR TOOL
7	143 0 133T 12601	TUNING CONTROLS COMPARTMENT COVER(S)
or	143 0 133T 12606	TUNING CONTROLS COMPARTMENT COVER(B)
8	143 2 731T 12800	AFT SWITCH
9	143 2 111T 06803	CABINET(S)
or	143 2 111T 06809	CABINET(B)
10	143 2 124T 09910	FRAME
or	143 2 124T 09911	FRAME
11	BJB2S++410+C1	S T BIND H 4X10C1(S)

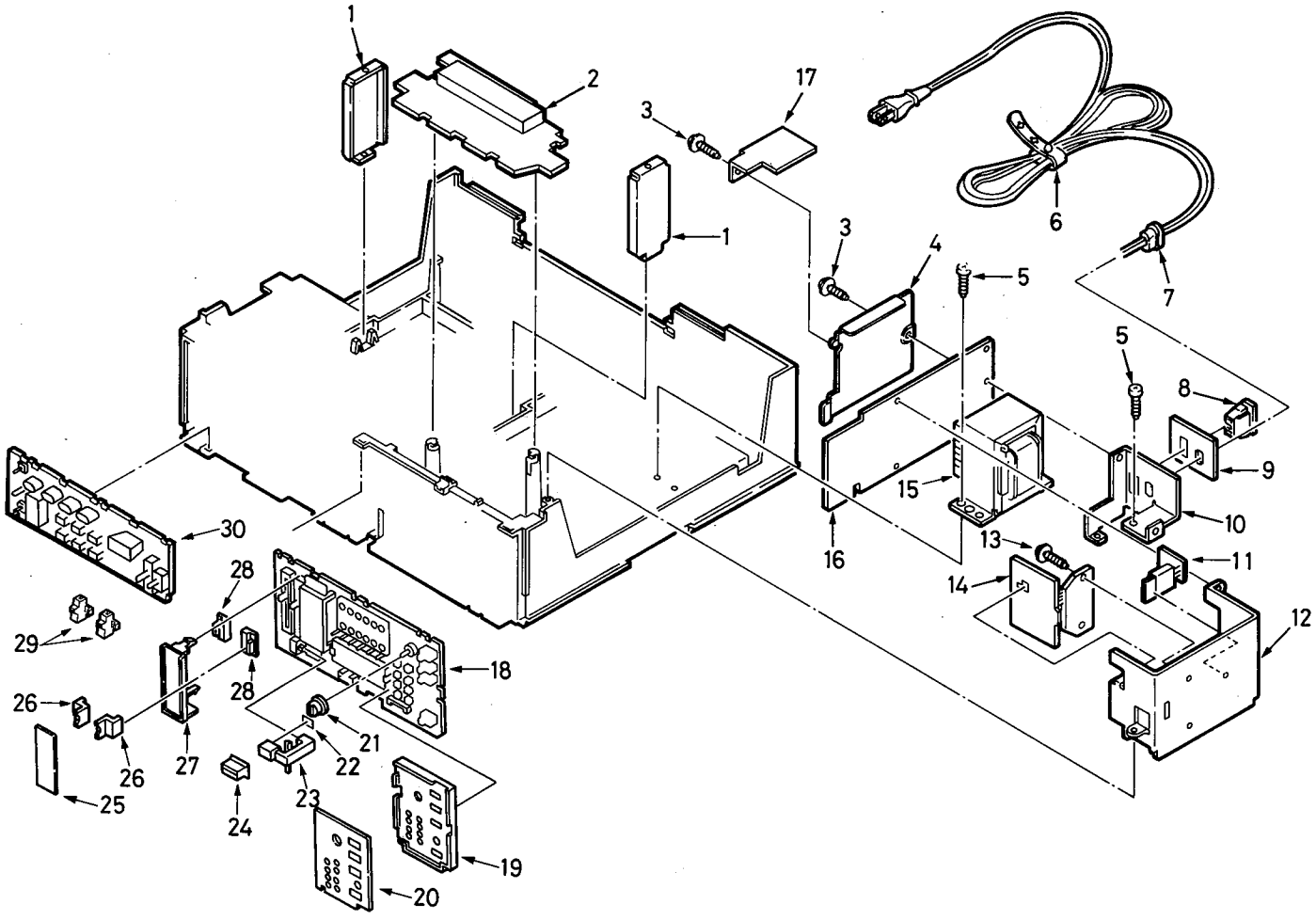
Ref. No.	Parts No.	Description
11	BJB2S++410+ZK	S T BIND 4X10ZK(B)
12	143 2 174T 02402	STAND
13	143 2 125T 05700	BOTTOM PLATE
14	BJB2S++3+8+Z1	S T BIND H 3X8Z1
15	143 2 246T 07201	SHEET,BOTTOM PLATE
16	143 2 236T 02700	CHANNEL INDICTOR PANEL
17	143 2 289T 09300	CHANNEL NUMBER SHEET(2-7)
18	143 2 289T 09301	CHANNEL NUMBER SHEET(8-13)
19	143 0 133T 12800	TIMER CONTROLS COMPARTMENT COVER(S)
or	143 0 133T 12802	TIMER CONTROLS COMPARTMENT COVER(B)



CHASSIS "1"

Ref. No.	Parts No.	Description
1	143 2 310T 00400	BRACKET,SHIELD PLATES
2	143 0 230V 34850	TN-2 ASSEMBLY
3	BJX6S++3+8+Z1	S T WASHER H 3X8Z1
4	143 2 327T 10600	INSULATOR,PW-1 PCB.
5	BJB2S++410+Z1	S T BIND H 4X10Z1
6	⚠ 4 243V 12621	POWER CORD
7	143 2 464T 02700	FIXER,POWER CORD
8	⚠ 4 235V 32500	AC OUTLET SOCKET
9	143 2 143T 40600	PLATE,CORD & SOCKET
10	143 2 310T 00200	BRACKET,POWER TRANSFORMER
11	143 0 230V 31353	PW-3 ASSEMBLY
12	143 2 368T 08100	HEAT SINK
13	BJX6S++314+Z1	S T WASHER H 3X14Z1
14	143 0 230V 31253	PW-2 ASSEMBLY
15	⚠ 4 251V 36800	POWER TRANSFORMER
16	143 0 230V 31153	PW-1 ASSEMBLY
17	143 2 322T 43600	SHIELD PLATE,PW-1 PCB.
18	143 0 230V 34950	AD-2 ASSEMBLY

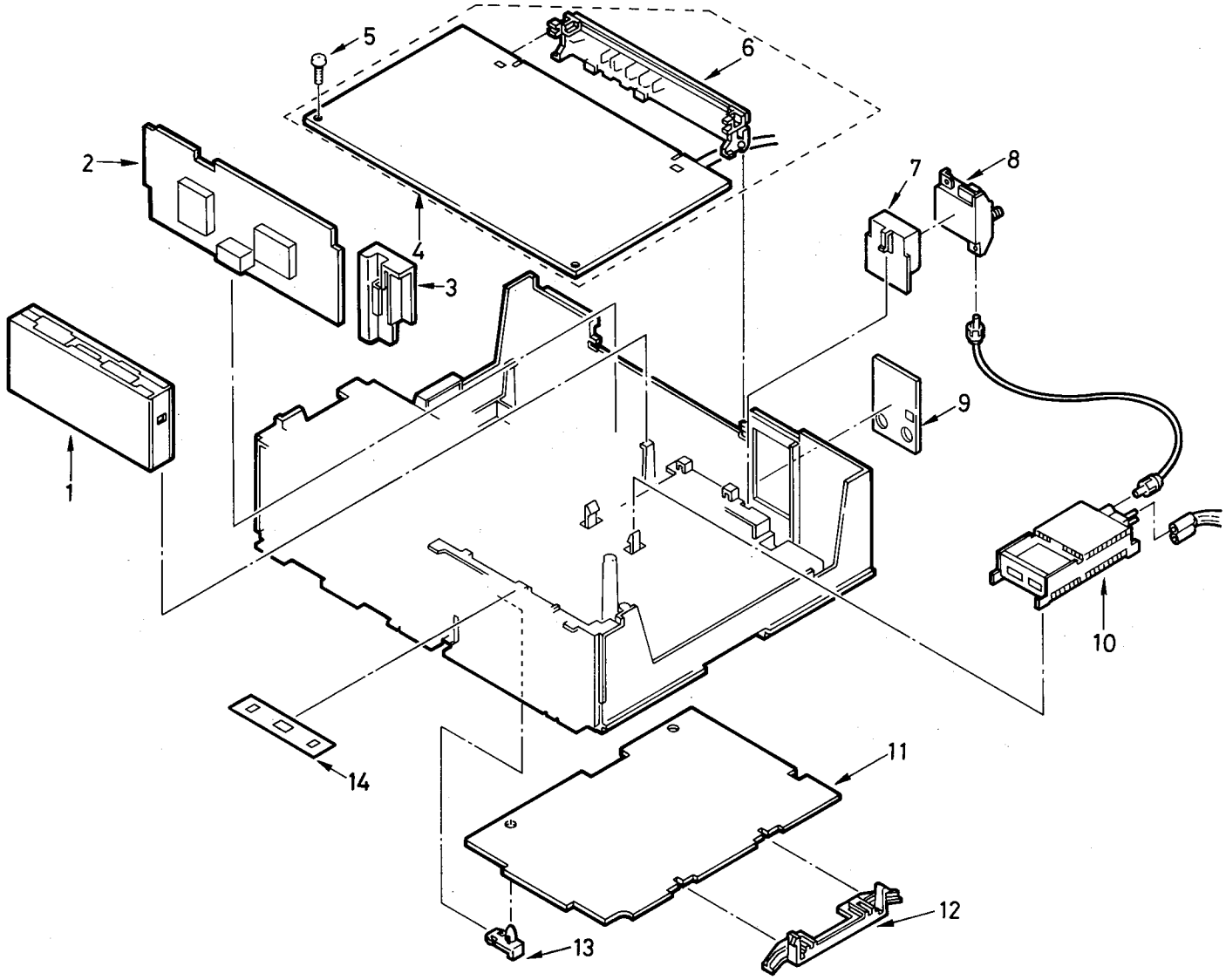
Ref. No.	Parts No.	Description
19	143 2 210T 01100	BRACKET,TIMER OPERATION
20	143 2 143T 37400	PLATE,TIMER OPERATION
21	143 2 163T 04000	TRACKING CONTROL KNOB
22	143 2 246T 15100	SHEET
23	143 2 164T 06200	AUDIO REC LEVEL SELECTOR KNOB
24	143 2 157T 06000	INLAY
25	143 2 246T 12800	SHEET,REC VOLUME
26	143 2 164T 06100	REC VOLUME CONTROLS KNOB
27	143 2 210T 01200	BRACKET, REC VOLUME
28	143 2 157T 05200	INLAY
29	143 2 164T 06000	REC MODE & AUDIO OUT SELECTORS
30	143 0 230V 36100	SY-2 ASSEMBLY



CHASSIS "2"

Ref. No.	Parts No.	Description
1	143 0 230V 34700	VP-1 ASSEMBLY
2	143 0 230V 36500	VD-1 ASSEMBLY
3	143 2 210T 00800	BRACKET,VD-1 PCB.
4	143 0 230V 36900	AD-1 ASSEMBLY
5	BJB2S++310+Z1	S T BIND H 3X10Z1
6	143 0 237V 19100	TERMINAL BOARD ASSEMBLY
7	143 2 210T 00700	BRACKET,RF CONVERTER
8	143 9 4300 57500	RF CONVERTER
or	143 9 4300 57501	RF CONVERTER
9	143 2 143T 36001	PLATE,BOOSTER

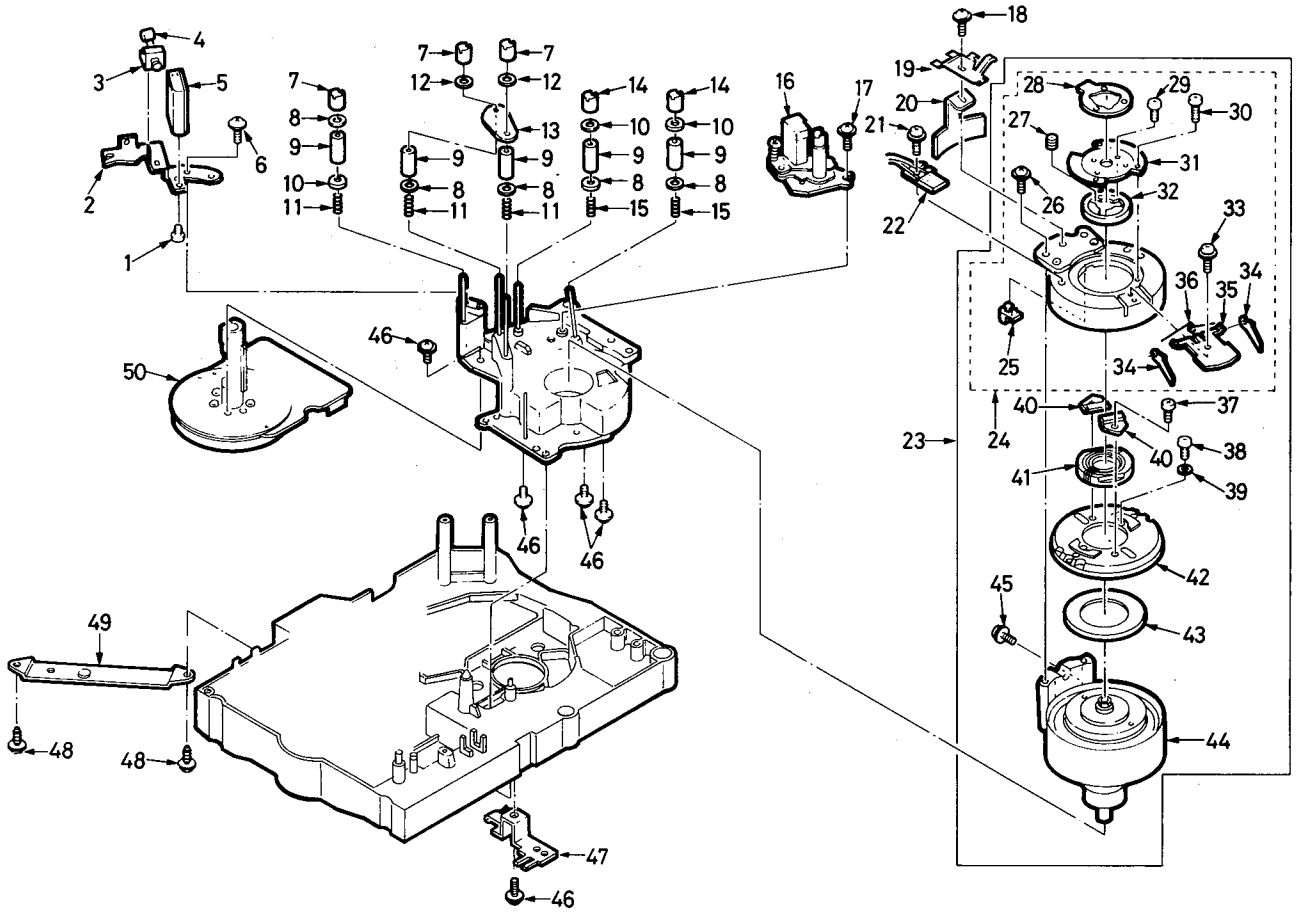
Ref. No.	Parts No.	Description
10	4 115V 19200	TUNER
11	143 0 230V 35150	SY-1 ASSEMBLY
12	143 2 377T 17900	BRACKET,SY-1 PCB.
13	143 2 251T 01400	HINGE,SY-1 PCB.
14	143 2 327T 10101	INSULATOR



DRUM,CAPSTAN,GUIDE & HEAD PARTS

Ref. No.	Parts No.	Description
1	BJNBS++2+3+Z1	S M PAN H 2X3Z1
2	143 2 375T 07600	BRACKET
3	4 258V 14500	FWD SENSOR
4	CN100472GM++S	P P CON 0.0047MF 100V G M
5	4 242V 18700	ERASE HEAD
6	BJY3S++3+6+Z1	S M WASHER H 3X6Z1
or	BJY3S++3+8+Z1	S M WASHER H 3X8Z1
7	143 2 421T 03400	SPECIAL SCREW
8	143 2 457T 07900	SPECIAL WASHER
9	143 2 821T 08300	TAPE GUIDE
or	143 2 821T 08301	TAPE GUIDE
or	143 2 821T 08302	TAPE GUIDE
10	143 2 457T 07800	SPECIAL WASHER
11	143 2 851T 61000	SPRING
12	WJBWS++3Y10Z1	WASHER 3X8X1
13	143 2 821T 08400	TAPE GUIDE
14	143 2 421T 03400	SPECIAL SCREW
or	143 2 421T 06800	SPECIAL SCREW
15	143 2 851T 61100	SPRING
16	143 0 242V 03100	AUDIO/CONTROL HEAD
17	BJX3S++3+6+Z1	S M PAN W/SPR,FLANGE 3X6Z1
or	BJY3S++3+6+Z1	S M WASHER H 3X6Z1
18	BJY3S++3+4+Z1	S M WASHER H 3X4Z1
19	143 2 853T 11900	SPRING PLATE
20	143 2 322T 24500	SHIELD PLATE
21	BJY1S++3+6+Z1	S M PAN W/SPR W,WASH 3X6Z1
22	4 221V 15400	DEW SENSOR
23	143 9 5100 55600	DRUM ASSEMBLY
24	143 0 771T 02403	UPPER DRUM ASSEMBLY
25	4 264V 14100	P.G. COIL
26	BJY2S++412+Z2	S M PAN H W/WASHER 4X12Z2

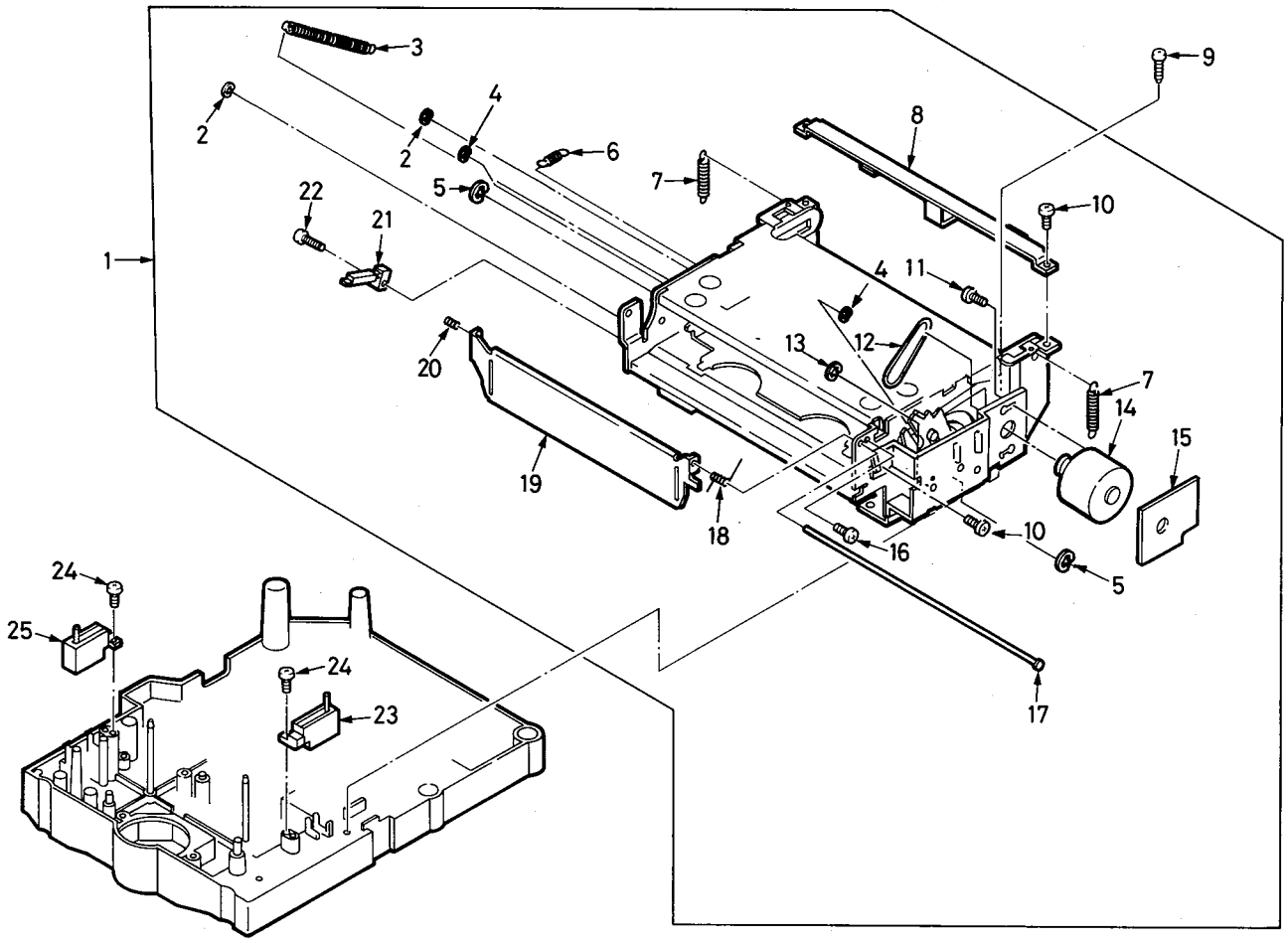
Ref. No.	Parts No.	Description
27	BJAMS2R6+4FCP	S M H LESS HEX SOCKET 2.6X4CP
28	4 226V 75350	WIRING P.C. BOARD
29	BJNBS2R6+3+Z2	S M PAN H 2.6X3Z2
30	BJNBS2R6+6+Z2	S M PAN H 2.6X6Z2
31	143 2 351T 43500	BRACKET
32	143 0 260V 00400	UPPER ROTARY TRANSFORMER
33	BJY1S++3+6+Z1	S M PAN W/SPR W,WASH 3X6Z1
or	BJY1S++3+8+Z2	S M PAN W/SPR W,WASH 3X8Z2
34	143 2 741T 34300	TAPE PATH LEVER
35	143 2 747T 05600	BRACKET
36	143 2 851T 56901	SPRING
37	BJNBS2R6+4+Z1	S M PAN H 2.6X4Z1
38	BJNBS++3+6+Z1	S M PAN H 3X6Z1
or	143 2 421T 06300	SPECIAL SCREW
39	143 2 457T 06800	SPECIAL WASHER
40	143 2 371T 01301	BRACKET
41	4 260V 00600	LOWER ROTARY TRANSFORMER
42	143 0 242V 04400	VIDEO HEAD DISC
43	143 2 772T 02600	SPACER 0.02
or	143 2 772T 02700	SPACER 0.04
44	143 0 771T 02502	LOWER DRUM ASSEMBLY
45	BJY1S++3+8+Z2	S M PAN W/SPR W,WASH 3X8Z2
46	BJY3S++3+8+Z1	S M WASHER H 3X8Z1
47	143 0 764T 00600	BRUSH
48	BJXWS++310+Z1	S T WASHER H 3X10Z1
49	143 2 465T 10600	STOPPER
50	4 527V 52100	CAPSTAN MOTOR



CASSETTE HOLDER MECHANISM PARTS

Ref. No.	Parts No.	Description
1	143 9 351T 60633	FRONT LOADING ASSEMBLY
2	TJETU+2R5++++	E RING 2.5
3	143 2 851T 69000	SPRING
4	TJETU+2R3++++	E RING 2.3
5	TJETU+++5++++	E RING 5
6	143 2 851T 71600	SPRING
7	143 2 851T 69300	SPRING
8	143 2 351T 60500	BRACKET
9	BJN2S++310+Z1	S T PAN H 3X10Z1
10	BJNBS++3+6+Z1	S M PAN H 3X6Z1
11	BJNBS2R6+3+Z1	S M PAN H 2.6X3Z1
12	143 2 564T 03400	SQUARE BELT
13	TJETU+++3++++	E RING 3
14	143 0 527V 01400	FRONT LOADING MOTOR
15	143 0 230V 28900	MC-9 ASSEMBLY

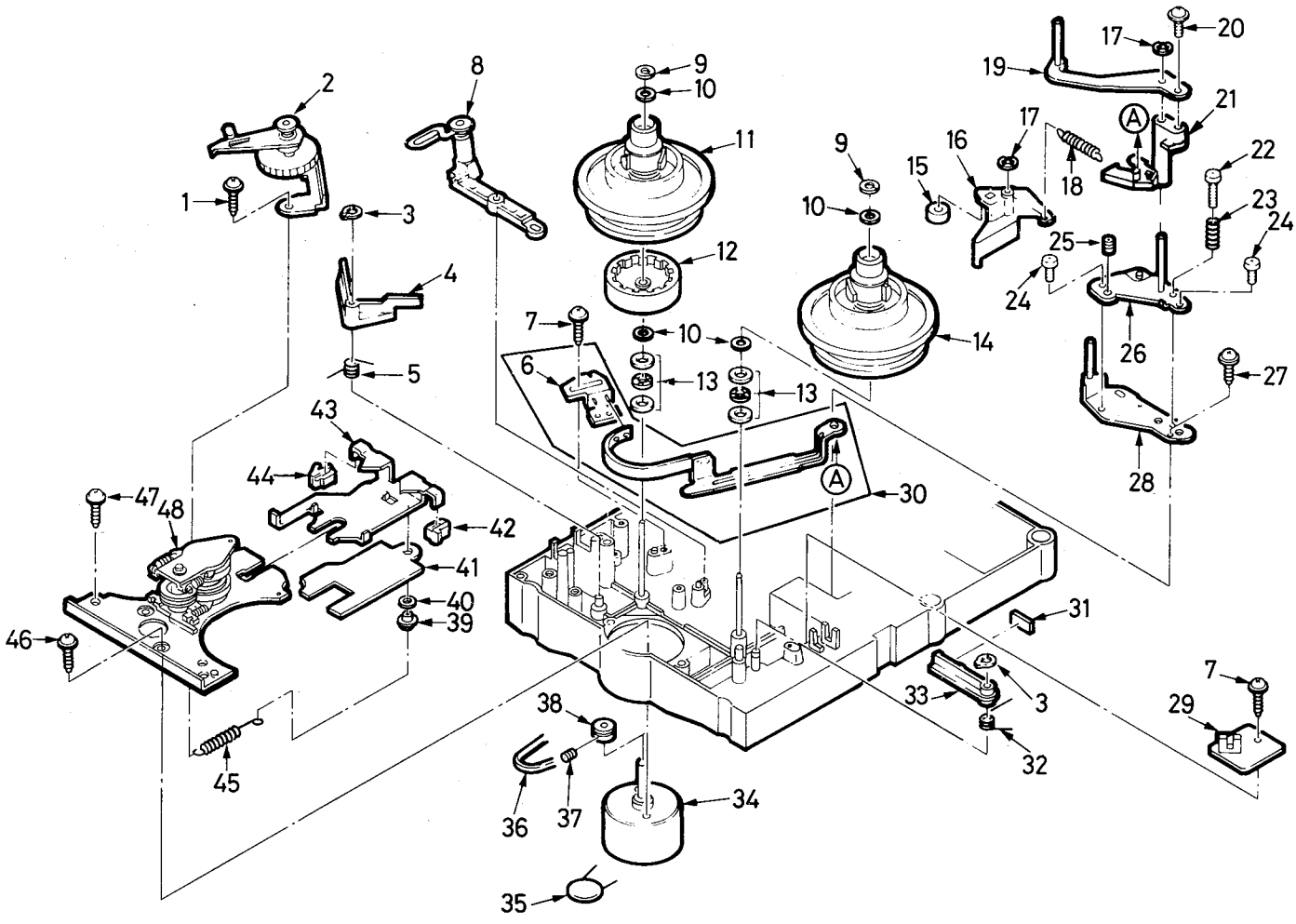
Ref. No.	Parts No.	Description
16	BJBYS++3+3+Z1	S M BIND H 3X3Z1
17	143 2 751T 60000	SHAFT
18	143 2 851T 62000	SPRING
19	143 0 143T 38300	FRONT LOADING DOOR
20	143 2 851T 64800	SPRING
21	4 231V 83500	FRONT LOADING SWITCH
22	BJY1S++210+Z1	S M PAN W/SPR W,WASH 2X10Z1
23	4 231V 81900	ERASE PRECVENTION SWITCH
24	BJN2S2R6+8+Z1	S T PAN H 2.6X8Z1
25	4 231V 81900	CASSETTE-IN SWITCH



REEL DRIVE MECHANISM PARTS

Ref. No.	Parts No.	Description
1	BJXWS++310+Z1	S T WASHER H 3X10Z1
2	143 0 714T 00200	RACHET BRAKE LEVER
3	TJGTS+++3++CP	GRIP RING 3
4	143 2 741T 39100	LEVER
5	143 2 851T 59700	SPRING
6	143 2 351T 43700	BRACKET
7	BJXWS++3+8+Z1	S T WASHER H 3X8Z1
or	BJXWS++310+Z1	S T WASHER H 3X10Z1
8	143 0 741T 19901	LEVER
9	143 2 457T 05901	SPECIAL WASHER
10	141 2 453T 30300	WASHER 3X5.4X0.13
or	141 2 453T 30301	WASHER 3X5.4X0.25
or	141 2 453T 30302	WASHER 3X5.4X0.5
11	143 0 531T 03300	SUPPLY REEL BASE(GEAR)
or	143 0 531T 04221	SUPPLY REEL BASE(ROLLER)
12	143 2 661T 69300	PULLEY
13	143 2 574T 02800	BEARING
14	143 0 531T 03400	TAKE-UP REEL BASE(GEAR)
or	143 0 531T 04421	TAKE-UP REEL BASE(ROLLER)
15	143 2 662T 09700	ROLLER
or	143 2 662T 09701	ROLLER
or	143 2 662T 09702	ROLLER
16	143 2 741T 37500	LEVER
17	TJETU+2R3++++	E RING 2.3
18	143 2 851T 59400	SPRING
19	143 0 741T 48400	LEVER
20	BJXWS++3+6+Z1	S T WASHER H 3X6Z1
21	143 2 741T 37601	LEVER
22	BJNBS++316+Z1	S M PAN H 3X16Z1
23	143 2 851T 59500	SPRING
24	BJNBS++3+6+Z1	S M PAN H 3X6Z1

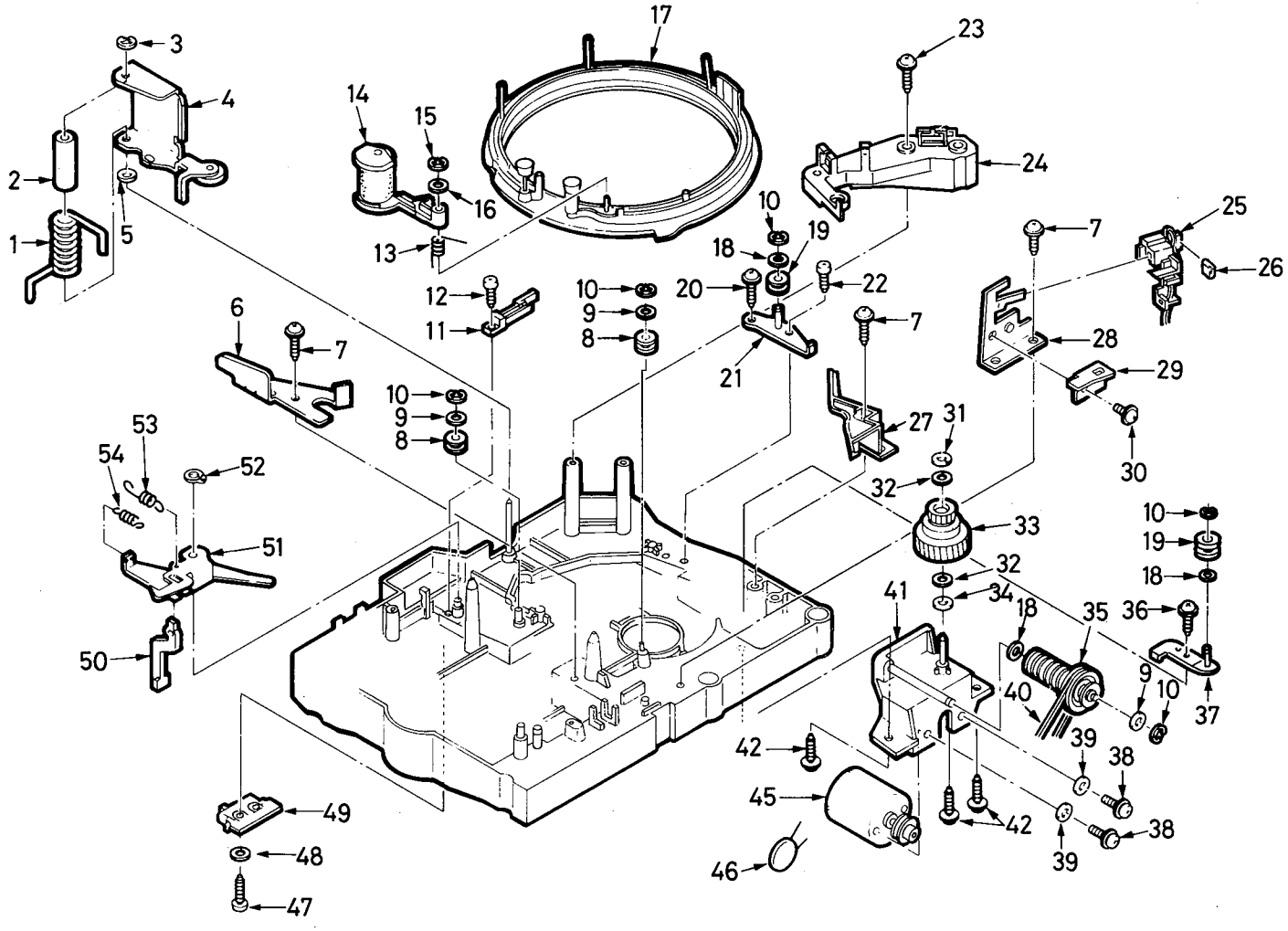
Ref. No.	Parts No.	Description
25	BJAMS++3+6TCP	S M H LESS HEX SOCKET 3X6CP
26	143 0 747T 04700	BRACKET
27	BJY1S++3+8+Z1	S M PAN W/SPR W,WASH 3X8Z1
28	143 0 747T 04600	BRACKET
29	143 9 1300 01100	MC-1 ASSEMBLY
30	143 0 711T 00500	BRAKE BAND
31	143 2 712T 03000	BRAKE SHOE
32	143 2 851T 59600	SPRING
33	143 2 741T 37400	LEVER
34	4 527V 01100	REEL MOTOR
35	CB+50104KDXRS	BC CON 0.1MF 50V K D XR
or	CB+50104MDXRS	BC CON 0.1MF 50V M D XR
36	143 2 564T 03200	SQUARE BELT
37	BJAMS2R6+4MCP	S M H LESS HEX SOCKET 2.6X4CP
38	143 2 661T 68800	PULLEY
39	143 2 681T 12000	SLEEVE
40	143 2 457T 08600	WASHER 4.6X8X0.5
41	143 2 246T 05600	SHEET
42	143 2 712T 02900	BRAKE SHOE
43	143 0 731T 01500	MODE SELECT SLIDE (GEAR)
or	143 0 731T 09201	MODE SELECT SLIDE(ROLLER)
44	143 2 712T 03200	BRAKE SHOE
45	143 2 851T 59200	SPRING
46	BJY3S2R6+4+Z1	S M WASHER H 2.6X4Z1
47	BJXWS++3+8+Z1	S T WASHER H 3X8Z1
48	143 0 662T 10350	REEL DRIVE PULLEY UNIT(ROLLER)
or	143 0 662T 13200	REEL DRIVE PULLEY UNIT(GEAR)



LOADING & UNLOADING MECHANISM PARTS

Ref. No.	Parts No.	Description
1	143 2 851T 60700	SPRING
2	143 2 461T 03202	PIPE
3	TJETU+++3++++	E RING 3
4	143 0 741T 19801	LEVER
5	141 2 453T 31701	WASHER 4X8X0.5
6	143 2 465T 10100	STOPPER
7	BJXWS++3+8+Z1	S T WASHER H 3X8Z1
8	143 2 662T 09900	ROLLER
or	143 2 662T 09901	ROLLER
9	141 2 453T 30201	WASHER 2.6X4.7X0.25
10	TJETU+++2++++	E RING 2
11	4 231V 82000	LOADING END SWITCH
12	BJN2S2R6+8+Z1	S T PAN H 2.6X8Z1
13	143 2 851T 60600	SPRING
14	143 0 545T 02000	PINCH ROLLER
15	TJETU+2R3++++	E RING 2.3
16	141 2 453T 30301	WASHER 3X5.4X0.25
17	143 0 683T 00401	LOADING RING
18	141 2 453T 30200	WASHER 2.6X4.7X0.13
19	143 2 662T 09900	ROLLER
20	BJS2S++310+Z1	S T FLAT H 3X10Z1
or	BJXWS++3+8+Z1	S T WASHER H 3X8Z1
21	143 0 351T 08400	BRACKET
22	BJN2S++3+8+Z1	S T PAN H 3X8Z1
23	BJXWS++312+Z1	S T WASHER H 3X12Z1
24	143 2 351T 61300	BRACKET
25	4 258V 16100	REW SENSOR
26	CN100332GM++S	P P CON 0.0033MF 100V G M
27	143 2 530T 00200	GUIDE
28	143 2 174T 03100	STAND

Ref. No.	Parts No.	Description
29	143 2 351T 58000	BRACKET
30	BJY3$++3+6+Z1	S M WASHER H 3X6Z1
31	143 2 457T 05901	SPECIAL WASHER
32	141 2 453T 30300	WASHER 3X5.4X0.13
33	143 2 581T 07400	GEAR
34	141 2 453T 30302	WASHER 3X5.4X0.5
35	143 0 581T 03200	GEAR
36	BJXWS++310+Z1	S T WASHER H 3X10Z1
or	BJXWS++312+Z1	S T WASHER H 3X12Z1
37	143 0 351T 10500	BRACKET
38	BJX2S2R6+4+Z1	S M PAN W/SPRING WAS 2.6X4Z1
39	WJBWS2R6R05Z1	WASHER 2.6X6X0.5
40	143 2 564T 03700	SQUARE BELT
41	143 0 378T 01500	BRACKET
42	BJXWS++310+Z1	S T WASHER H 3X10Z1
45	143 0 527V 00900	LOADING MOTOR
46	CB+50104MDXRS	BC CON 0.1MF 50V M D XR
47	BJN2S2R312+Z1	S T PAN H 2.3X12Z1
48	WJBWS2R3R04Z1	WASHER 2.3X6X0.4
49	4 231V 81700	UNLOADING END SWITCH
50	143 2 741T 39000	LEVER
51	143 2 741T 38600	LEVER
52	TJGTS+++3++CP	GRIP RING 3
53	143 2 851T 60100	SPRING
54	143 2 851T 61200	SPRING



ELECTRICAL PARTS

NOTE:

* Materials of Capacitors are abbreviated as follows;

Elect., ...Electrolytic Capacitor
NP. Elect., ...Non-Polarized Electrolytic Capacitor
Mylar .....Mylar Film Capacitor
Polypro .....Polypropylene Capacitor
M. Polypro .....Metallized Polypropylene Capacitor
TF .....Thin Film Capacitor
EDL.....Electric Double Layer Capacitor

* Tolerance of Capacitor and Resistors are noted with follow symboles;

A.....+75−10%
G .....±2%
J .....±5%
K.....±10%
M .....±20%
N.....±30%
P.....+100−0%
Z.....+80−20%

VD-1 P.C.B.(VIDEO CIRCUIT)
ASSY.NO.143-0-230V-36500

Schematic Location	Parts No.	Description
		(MISCELLANEOUS)
DL1001	4 284V 13100	DELAY LINE
DL1002	4 284V 16000	DELAY LINE
DL1003	4 228V 15750	DELAY LINE
or	4 284V 16100	DELAY LINE
X1001	4 225V 18700	CRYSTAL 3.579545MHZ
or	4 225V 18750	CRYSTAL 3.579545MHZ
		(VARIABLE RESISTORS)
SVR1001	4 222V 65105	5K OHM
SVR1002	4 222V 65109	20K OHM
SVR1006	4 222V 65104	2K OHM
SVR1007	4 222V 65104	2K OHM
SVR1008	4 222V 65113	100K OHM
SVR1009	4 222V 65105	5K OHM
SVR1010	4 222V 65103	1K OHM
SVR1011	4 222V 65109	20K OHM
SVR1012	4 222V 65105	5K OHM
SVR1013	4 222V 63800	500 OHM
SVR1014	4 222V 65109	20K OHM
SVR1015	4 222V 65105	5K OHM
		(COILS)
L1001	4 253V 85829	HF CHOKE 220UH
L1002	4 253V 85829	HF CHOKE 220UH
L1003	4 253V 85819	HF CHOKE 33UH
L1004	4 253V 85821	HF CHOKE 47UH
L1005	4 253V 97303	HF CHOKE 8.2MH
L1006	4 253V 85824	HF CHOKE 82UH
L1007	4 253V 85833	HF CHOKE 470UH
L1008	4 253V 85815	HF CHOKE 15UH
L1009	4 253V 85822	HF CHOKE 56UH
L1010	4 253V 85819	HF CHOKE 33UH
L1011	4 253V 88608	HF CHOKE 3.9UH
L1012	4 253V 85826	HF CHOKE 120UH
L1013	4 253V 85829	HF CHOKE 220UH
L1014	4 253V 85829	HF CHOKE 220UH
L1015	4 253V 85830	HF CHOKE 270UH
L1016	4 253V 85828	HF CHOKE 180UH
L1017	4 253V 85812	HF CHOKE 8.2UH
L1018	4 253V 85814	HF CHOKE 12UH
L1019	4 253V 85821	HF CHOKE 47UH
L1020	4 253V 85827	HF CHOKE 150UH
L1021	4 253V 85828	HF CHOKE 180UH
L1022	4 253V 85827	HF CHOKE 150UH
L1023	4 253V 88627	HF CHOKE 150UH
L1024	4 253V 85828	HF CHOKE 180UH
L1025	4 253V 88627	HF CHOKE 150UH
L1026	4 253V 85824	HF CHOKE 82UH
		(COIL TRANSFORMERS)
T1001	4 258V 13800	OSC COIL
T1002	4 256V 24400	IFT
T1003	4 256V 24300	IFT
T1004	4 259V 18700	HF COIL TRANS
T1005	4 259V 18800	HF COIL TRANS
T1006	4 259V 25100	HF COIL TRANS
T1007	4 259V 18900	HF COIL TRANS
T1008	4 259V 23500	HF COIL TRANS
T1009	4 256V 24500	IFT
or	4 256V 24600	IFT
T1010	4 256V 28800	IFT
		(INTEGRATED CIRCUITS)
IC1001	SILA7003S++++	IC LA7003S
IC1002	SILA7009S++++	IC LA7009S
IC1003	SILA7000S++++	IC LA7000S
IC1004	SILA7016+++++	IC LA7016
IC1005	SILA7005S++++	IC LA7005S
IC1006	SILA7013+++++	IC LA7013
IC1008	SITA7350AP+++	IC TA7350AP
		(TRANSISTORS)
Q1001	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1002	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1003	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1004	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1005	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1006	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1007	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1008	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1009	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q1010	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q1011	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q1012	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q1013	STA608+E++++1	TR 2SA608 E SP
or	STA608+F++++1	TR 2SA608 F SP
Q1014	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q1015	STA608+E++++1	TR 2SA608 E SP
or	STA608+F++++1	TR 2SA608 F SP
Q1016	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q1018	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q1019	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP

Schematic Location	Parts No.	Description
Q1020	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
		(DIODES)
D1001	SD1SS133++++T	DIODE 1SS133
D1002	SD1SS133++++T	DIODE 1SS133
D1003	SD1SS133++++T	DIODE 1SS133
D1004	SD1SS133++++T	DIODE 1SS133
D1006	SD1SS133++++T	DIODE 1SS133
D1007	SDGZA068Y++++	ZENER DIODE GZA6.8Y
		(CAPACITORS)
C1001	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1002	CE+25475MRHAL	ELECT 4.7MF 25V M R HA
C1003	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1004	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1005	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1006	CC+50560JASLG	CERAMIC 56PF 50V J A SL G
C1008	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1009	CC+50680JASLG	CERAMIC 68PF 50V J A SL G
C1010	CE+16106MVHAS	ELECT 10MF 16V M V HA
C1011	CC+50130JASLG	CERAMIC 13PF 50V J A SL G
C1012	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1013	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1014	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1015	CC+50101KAYBG	CERAMIC 100PF 50V K A YB G
C1016	CE+25335MRHAL	ELECT 3.3MF 25V M R HA
C1017	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1018	CC+50330JASLG	CERAMIC 33PF 50V J A SL G
C1019	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1020	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1021	CB+16152MAXRG	BC CON 0.0015MF 16V M AXRG
C1022	CC+50681KAYBG	CERAMIC 680PF 50V K A YB G
C1023	CC+50681KAYBG	CERAMIC 680PF 50V K A YB G
C1024	CE+25475MRHAL	ELECT 4.7MF 25V M R HA
C1025	CC+50102KAYBG	CERAMIC 0.001MF 50V K AYBG
C1026	CC+50150JASLG	CERAMIC 15PF 50V J A SL G
C1027	CB+16472MAXRG	BC CON 0.0047MF 16V M AXRG
C1028	CB+16682MAXRG	BC CON 0.0068MF 16V M AXRG
C1029	CC+50102KAYBG	CERAMIC 0.001MF 50V K AYBG
C1030	CE+25474MRHAL	ELECT 0.47MF 25V M R HA
C1031	CC+501R5CDSLS	CERAMIC 1.5PF 50V C D SL
C1032	CB+25153KDXRS	BC CON 0.015MF 25V K D XR
C1033	CC+50391KAYBG	CERAMIC 390PF 50V K A YB G
C1034	CC+50151KAYBG	CERAMIC 150PF 50V K A YB G
C1035	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1036	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1037	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1038	CC+50820KAYBG	CERAMIC 82PF 50V K A YB G
C1039	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1040	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1041	CC+50180JASLG	CERAMIC 18PF 50V J A SL G
C1042	CC+50101KAYBG	CERAMIC 100PF 50V K A YB G
C1043	CE+10226MRHAL	ELECT 22MF 10V M R HA
C1044	CE+10226MRHAL	ELECT 22MF 10V M R HA
C1045	CC+50221KAYBG	CERAMIC 220PF 50V K A YB G
C1046	CA+16224MV++S	AL ELECT 0.22MF 16V M V
C1047	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1048	CC+50181KLYBS	CERAMIC 180PF 50V K L YB
C1049	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1050	CE+10476MRHAL	ELECT 47MF 10V M R HA
C1051	CC+50101KAYBG	CERAMIC 100PF 50V K A YB G
C1052	CE+25475MRHAL	ELECT 4.7MF 25V M R HA
C1053	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1054	CC+50151JDCHS	CERAMIC 150PF 50V J D CH
C1055	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1056	CE+16106MRHAL	ELECT 10MF 16V M R HA
C1057	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1058	CC+50470JASLG	CERAMIC 47PF 50V J A SL G
C1059	CA+16224MV++S	AL ELECT 0.22MF 16V M V
C1060	CE+10226MRHAL	ELECT 22MF 10V M R HA
C1061	CC+50681KAYBG	CERAMIC 680PF 50V K A YB G

Schematic Location	Parts No.	Description
C1062	CC+50151KAYBG	CERAMIC 150PF 50V K A YB G
C1063	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1064	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1065	CC+50330JASLG	CERAMIC 33PF 50V J A SL G
C1066	CE+10336MRHAL	ELECT 33MF 10V M R HA
C1067	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1068	CC+50390JASLG	CERAMIC 39PF 50V J A SL G
C1069	CC+50470JASLG	CERAMIC 47PF 50V J A SL G
C1070	CB+25272KDXRS	BC CON 0.0027MF 25V K D XR
C1071	CC+50101KAYBG	CERAMIC 100PF 50V K A YB G
C1072	CC+505R6DASLG	CERAMIC 5.6PF 50V D A SL G
C1073	CC+50471KAYBG	CERAMIC 470PF 50V K A YB G
C1074	CC+50470JASLG	CERAMIC 47PF 50V J A SL G
C1075	CC+50100JASLG	CERAMIC 10PF 50V J A SL G
C1076	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1077	CC+50300JASLG	CERAMIC 30PF 50V J A SL G
C1078	CC+50560JASLG	CERAMIC 56PF 50V J A SL G
C1079	CC+50470JASLG	CERAMIC 47PF 50V J A SL G
C1080	CC+505R6DASLG	CERAMIC 5.6PF 50V D A SL G
C1081	CC+50182KDYBS	CERAMIC 0.0018MF 50V K DYB
C1082	CC+50910JDSLS	CERAMIC 91PF 50V J D SL
C1083	CC+50391KAYBG	CERAMIC 390PF 50V K A YB G
C1084	CC+50391KAYBG	CERAMIC 390PF 50V K A YB G
C1085	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1086	CE+16106MRHAL	ELECT 10MF 16V M R HA
C1087	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1088	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1089	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1090	CE+10226MRHAL	ELECT 22MF 10V M R HA
C1091	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1092	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1093	CC+50391KAYBG	CERAMIC 390PF 50V K A YB G
C1094	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1095	CB+25103NLXRS	BC CON 0.01MF 25V N L XR
C1096	CC+50561KAYBG	CERAMIC 560PF 50V K A YB G
C1097	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1098	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1099	CC+50820KAYBG	CERAMIC 82PF 50V K A YB G
C1100	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1101	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1102	CC+50151KAYBG	CERAMIC 150PF 50V K A YB G
C1103	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1104	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1105	CC+50270JASLG	CERAMIC 27PF 50V J A SL G
C1106	CC+50121KAYBG	CERAMIC 120PF 50V K A YB G
C1107	CC+50680JASLG	CERAMIC 68PF 50V J A SL G
C1108	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1109	CC+50270JASLG	CERAMIC 27PF 50V J A SL G
C1110	CC+50270JASLG	CERAMIC 27PF 50V J A SL G
C1111	CC+505R6DASLG	CERAMIC 5.6PF 50V D A SL G
C1112	CC+50180JASLG	CERAMIC 18PF 50V J A SL G
C1113	CC+50270JASLG	CERAMIC 27PF 50V J A SL G
C1114	CC+504R7DASLG	CERAMIC 4.7PF 50V D A SL G
C1115	CC+50750KAYBG	CERAMIC 75PF 50V K A YB G
C1116	CC+50270JASLG	CERAMIC 27PF 50V J A SL G
C1117	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1118	CB+25103NLXRS	BC CON 0.01MF 25V N L XR
C1119	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1120	CC+505R6DASLG	CERAMIC 5.6PF 50V D A SL G
C1121	CC+50181KAYBG	CERAMIC 180PF 50V K A YB G
C1122	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1123	CB+16182MAXRG	BC CON 0.0018MF 16V M AXRG
C1124	CB+16272MAXRG	BC CON 0.0027MF 16V M AXRG
C1125	CC+50101KAYBG	CERAMIC 100PF 50V K A YB G
C1126	CC+50151KAYBG	CERAMIC 150PF 50V K A YB G
C1127	CE+10226MRHAL	ELECT 22MF 10V M R HA
C1130	CC+504R7DASLG	CERAMIC 4.7PF 50V D A SL G
C1131	CC+50510JASLG	CERAMIC 51PF 50V J A SL G
C1133	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1137	CE+25105MRHAL	ELECT 1MF 25V M R HA
C1138	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1139	CC+50101KAYBG	CERAMIC 100PF 50V K A YB G
C1140	CC+50121KAYBG	CERAMIC 120PF 50V K A YB G

Schematic Location	Parts No.	Description
C1143	CC+50102KAYBG	CERAMIC 0.001MF 50V K AYBG
C1144	CE+25475MRHAL	ELECT 4.7MF 25V M R HA
C1147	CB+25273KDXRS	BC CON 0.027MF 25V K D XR
C1148	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1149	CE+10476MRHAL	ELECT 47MF 10V M R HA
C1150	CB+12104MDBCS	BC CON 0.1MF 12V M D BC
C1151	CE+10107MVHAS	ELECT 100MF 10V M V HA
C1152	CE+10107MRHAL	ELECT 100MF 10V M R HA
C1153	CE6R3108MVHAS	ELECT 1000MF 6.3V M V HA
C1154	CB+16103NA+YG	BC CON 0.01MF 16V N A Y G
C1155	CE+10226MRHAL	ELECT 22MF 10V M R HA
C1157	CE+10226MRHAL	ELECT 22MF 10V M R HA
C1158	CB+16103NL+YG	BC CON 0.01MF 16V N L Y G
		(RESISTORS)
R1001	RC/+4103JT++T	CARBON T 10K OHM J1/4WR20
R1002	RC/+4822JT++T	CARBON T 8.2KOHM J1/4WR20
R1003	RC/+4433JT++T	CARBON T 43K OHM J1/4WR20
R1004	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1005	RC/+4103JT++T	CARBON T 10K OHM J1/4WR20
R1006	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1007	RC/+4431JT++T	CARBON T 430 OHM J1/4WR20
R1008	RC/+4121JT++T	CARBON T 120 OHM J1/4WR20
R1009	RC/+4682JT++T	CARBON T 6.8KOHM J1/4WR20
R1010	RC/+4223JT++T	CARBON T 22K OHM J1/4WR20
R1011	RC/+4562JT++T	CARBON T 5.6KOHM J1/4WR20
R1012	RC/+4512JT++T	CARBON T 5.1KOHM J1/4WR20
R1013	RC/+4153JT++T	CARBON T 15K OHM J1/4WR20
R1014	RC/+4152JT++T	CARBON T 1.5KOHM J1/4WR20
R1015	RC/+4153JT++T	CARBON T 15K OHM J1/4WR20
R1016	RC/+4332JT++T	CARBON T 3.3KOHM J1/4WR20
R1017	RC/+4103JT++T	CARBON T 10K OHM J1/4WR20
R1018	RC/+4393JT++T	CARBON T 39K OHM J1/4WR20
R1019	RC/+4823JT++T	CARBON T 82K OHM J1/4WR20
R1020	RC/+4122JT++T	CARBON T 1.2KOHM J1/4WR20
R1021	RC/+4473JT++T	CARBON T 47K OHM J1/4WR20
R1022	RC/+4201JT++T	CARBON T 200 OHM J1/4WR20
R1023	RC/+4122JT++T	CARBON T 1.2KOHM J1/4WR20
R1024	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1025	RC/+4104JT++T	CARBON T 100KOHM J1/4WR20
R1027	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1028	RC/+4272JT++T	CARBON T 2.7KOHM J1/4WR20
R1029	RC/+4561JT++T	CARBON T 560 OHM J1/4WR20
R1030	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1031	RC/+4393JT++T	CARBON T 39K OHM J1/4WR20
R1032	RC/+4272JT++T	CARBON T 2.7KOHM J1/4WR20
R1033	RC/+4272JT++T	CARBON T 2.7KOHM J1/4WR20
R1034	RC/+4203JT++T	CARBON T 20K OHM J1/4WR20
R1035	RC/+4471JT++T	CARBON T 470 OHM J1/4WR20
R1036	RC/+4471JT++T	CARBON T 470 OHM J1/4WR20
R1037	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1038	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1039	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1040	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1041	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1042	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1043	RC/+4151JT++T	CARBON T 150 OHM J1/4WR20
R1044	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1045	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1046	RC/+4332JT++T	CARBON T 3.3KOHM J1/4WR20
R1047	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1048	RC/+4162JT++T	CARBON T 1.6KOHM J1/4WR20
R1049	RC/+4471JT++T	CARBON T 470 OHM J1/4WR20
R1051	RC/+4183JT++T	CARBON T 18K OHM J1/4WR20
R1052	RC/+4562JT++T	CARBON T 5.6KOHM J1/4WR20
R1053	RC/+4121JT++T	CARBON T 120 OHM J1/4WR20
R1054	RC/+4432JT++T	CARBON T 4.3KOHM J1/4WR20
R1055	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1056	RC/+4103JP++R	CARBON P 10K OHM J1/4WR25
R1057	RC/+4471JT++T	CARBON T 470 OHM J1/4WR20
R1058	RC/+4562JT++T	CARBON T 5.6KOHM J1/4WR20
R1059	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20

Schematic Location	Parts No.	Description
R1060	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1061	RC/+4103JT++T	CARBON T 10K OHM J1/4WR20
R1062	RC/+4103JT++T	CARBON T 10K OHM J1/4WR20
R1063	RC/+4514JT++T	CARBON T 510KOHM J1/4WR20
R1064	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1065	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1066	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1067	RC/+4563JT++T	CARBON T 56K OHM J1/4WR20
R1068	RC/+4332JT++T	CARBON T 3.3KOHM J1/4WR20
R1069	RC/+4361JT++T	CARBON T 360 OHM J1/4WR20
R1070	RC/+4472JT++T	CARBON T 4.7KOHM J1/4WR20
R1071	RC/+4822JT++T	CARBON T 8.2KOHM J1/4WR20
R1072	RC/+4153JT++T	CARBON T 15K OHM J1/4WR20
R1073	RC/+4272JT++T	CARBON T 2.7KOHM J1/4WR20
R1074	RC/+4202JP++R	CARBON P 2K OHM J1/4WR25
R1075	RC/+4122JT++T	CARBON T 1.2KOHM J1/4WR20
R1076	RC/+4821JT++T	CARBON T 820 OHM J1/4WR20
R1077	RC/+4393JT++T	CARBON T 39K OHM J1/4WR20
R1078	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1079	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1080	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1081	RC/+4431JT++T	CARBON T 430 OHM J1/4WR20
R1082	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1083	RC/+4471JT++T	CARBON T 470 OHM J1/4WR20
R1084	RC/+4331JT++T	CARBON T 330 OHM J1/4WR20
R1085	RC/+4472JT++T	CARBON T 4.7KOHM J1/4WR20
R1086	RC/+4202JT++T	CARBON T 2K OHM J1/4WR20
R1087	RC/+4122JT++T	CARBON T 1.2KOHM J1/4WR20
R1088	RC/+4223JT++T	CARBON T 22K OHM J1/4WR20
R1089	RC/+4301JT++T	CARBON T 300 OHM J1/4WR20
R1090	RC/+4471JT++T	CARBON T 470 OHM J1/4WR20
R1091	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1092	RC/+4101JT++T	CARBON T 100 OHM J1/4WR20
R1095	RC/+4183JT++T	CARBON T 18K OHM J1/4WR20
R1096	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1097	RC/+4471JT++T	CARBON T 470 OHM J1/4WR20
R1098	RC/+4101JT++T	CARBON T 100 OHM J1/4WR20
R1099	RC/+4331JT++T	CARBON T 330 OHM J1/4WR20
R1100	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1101	RC/+4153JT++T	CARBON T 15K OHM J1/4WR20
R1102	RC/+4750JT++T	CARBON T 75 OHM J1/4WR20
R1103	RC/+4331JT++T	CARBON T 330 OHM J1/4WR20
R1104	RC/+4122JT++T	CARBON T 1.2KOHM J1/4WR20
R1105	RC/+4103JT++T	CARBON T 10K OHM J1/4WR20
R1106	RC/+4203JT++T	CARBON T 20K OHM J1/4WR20
R1107	RC/+4222JT++T	CARBON T 2.2KOHM J1/4WR20
R1108	RC/+4473JT++T	CARBON T 47K OHM J1/4WR20
R1109	RC/+4101JT++T	CARBON T 100 OHM J1/4WR20
R1110	RC/+4103JP++R	CARBON P 10K OHM J1/4WR25
R1111	RC/+4392JT++T	CARBON T 3.9KOHM J1/4WR20
R1113	RC/+4621JT++T	CARBON T 620 OHM J1/4WR20
R1114	RC/+4911JT++T	CARBON T 910 OHM J1/4WR20
R1115	RC/+4473JT++T	CARBON T 47K OHM J1/4WR20
R1116	RC/+4162JT++T	CARBON T 1.6KOHM J1/4WR20
R1117	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1118	RC/+4270JT++T	CARBON T 27 OHM J1/4WR20
R1119	RC/+4432JT++T	CARBON T 4.3KOHM J1/4WR20
R1120	RC/+4132JT++T	CARBON T 1.3KOHM J1/4WR20
R1121	RC/+4821JT++T	CARBON T 820 OHM J1/4WR20
R1122	RC/+4122JT++T	CARBON T 1.2KOHM J1/4WR20
R1123	RC/+4752JT++T	CARBON T 7.5KOHM J1/4WR20
R1124	RC/+4621JT++T	CARBON T 620 OHM J1/4WR20
R1125	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1126	RC/+4472JT++T	CARBON T 4.7KOHM J1/4WR20
R1127	RC/+4132JT++T	CARBON T 1.3KOHM J1/4WR20
R1128	RC/+4332JT++T	CARBON T 3.3KOHM J1/4WR20
R1129	RC/+4101JT++T	CARBON T 100 OHM J1/4WR20
R1130	RC/+4622JT++T	CARBON T 6.2KOHM J1/4WR20
R1131	RC/+4562JT++T	CARBON T 5.6KOHM J1/4WR20
R1132	RC/+4512JT++T	CARBON T 5.1KOHM J1/4WR20
R1133	RC/+4122JT++T	CARBON T 1.2KOHM J1/4WR20
R1134	RC/+4332JT++T	CARBON T 3.3KOHM J1/4WR20
R1135	RC/+4332JT++T	CARBON T 3.3KOHM J1/4WR20

Schematic Location	Parts No.	Description
R1136	RC/+4561JT++T	CARBON T 560 OHM J1/4WR20
R1137	RC/+4470JT++T	CARBON T 47 OHM J1/4WR20
R1138	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1139	RC/+4561JT++T	CARBON T 560 OHM J1/4WR20
R1140	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1141	RC/+4561JT++T	CARBON T 560 OHM J1/4WR20
R1142	RC/+4622JT++T	CARBON T 6.2KOHM J1/4WR20
R1149	RC/+4152JT++T	CARBON T 1.5KOHM J1/4WR20
R1150	RC/+4562JT++T	CARBON T 5.6KOHM J1/4WR20
R1151	RC/+4562JT++T	CARBON T 5.6KOHM J1/4WR20
R1152	RC/+4512JT++T	CARBON T 5.1KOHM J1/4WR20
R1153	RC/+4682JT++T	CARBON T 6.8KOHM J1/4WR20
R1154	RC/+4332JT++T	CARBON T 3.3KOHM J1/4WR20
R1155	RC/+4123JT++T	CARBON T 12K OHM J1/4WR20
R1156	RC/+4332JT++T	CARBON T 3.3KOHM J1/4WR20
R1163	RC/+4331JT++T	CARBON T 330 OHM J1/4WR20
R1164	RC/+4912JT++T	CARBON T 9.1KOHM J1/4WR20
R1165	RC/+4133JT++T	CARBON T 13K OHM J1/4WR20
R1166	RC/+4681JT++T	CARBON T 680 OHM J1/4WR20
R1168	RC/+4203JT++T	CARBON T 20K OHM J1/4WR20
R1170	RC/+4821JT++T	CARBON T 820 OHM J1/4WR20
R1171	RC/+4472JT++T	CARBON T 4.7KOHM J1/4WR20
R1177	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1179	RC/+4473JT++T	CARBON T 47K OHM J1/4WR20
R1182	RC/+4203JT++T	CARBON T 20K OHM J1/4WR20
R1183	RC/+4223JT++T	CARBON T 22K OHM J1/4WR20
R1184	RC/+4102JT++T	CARBON T 1K OHM J1/4WR20
R1185	RC/+4151JT++T	CARBON T 150 OHM J1/4WR20
R1186	RC/+4103JT++T	CARBON T 10K OHM J1/4WR20
R1187	RC/+4181JT++T	CARBON T 180 OHM J1/4WR20
R1188	RC/+4273JT++T	CARBON T 27K OHM J1/4WR20
R1189	RC/+4680JT++T	CARBON T 68 OHM J1/4WR20
R1190	RC/+4821JT++T	CARBON T 820 OHM J1/4WR20
R1192	RC/+4222JP++T	CARBON P 2.2KOHM J1/4WR20

VP-1 P.C.B.(VIDEO PRE-AMP CIRCUIT)
ASSY.NO.143-0-230V-34700

Schematic Location	Parts No.	Description
		(VARIABLE RESISTORS)
SVR1501	4 222V 65305	2K OHM
SVR1502	4 222V 65305	2K OHM
SVR1503	4 222V 65306	5K OHM
SVR1504	4 222V 65308	10K OHM
SVR1505	4 222V 65308	10K OHM
		(COILS)
L1501	4 253V 89257	HF CHOKE 0.82UH
or	4 253V 98007	HF CHOKE 0.82UH
L1502	4 253V 89257	HF CHOKE 0.82UH
or	4 253V 98007	HF CHOKE 0.82UH
L1503	4 253V 97402	HF CHOKE 6.8MH
L1504	4 253V 97402	HF CHOKE 6.8MH
L1505	4 253V 85815	HF CHOKE 15UH
L1506	4 253V 85815	HF CHOKE 15UH
L1507	4 253V 85830	HF CHOKE 270UH
L1509	4 253V 85821	HF CHOKE 47UH
L1510	4 253V 85826	HF CHOKE 120UH
L1511	4 253V 85826	HF CHOKE 120UH
L1512	4 253V 85825	HF CHOKE 100UH
L1513	4 253V 85837	HF CHOKE 1MH
L1514	4 253V 85829	HF CHOKE 220UH
L1516	4 253V 85829	HF CHOKE 220UH
L1518	4 253V 85825	HF CHOKE 100UH
L1519	4 253V 85826	HF CHOKE 120UH
		(COIL TRANSFORMERS)
T1501	4 288V 10800	STEP UP TRANS

Schematic Location	Parts No.	Description
T1502	4 288V 10800	STEP UP TRANS
		(INTEGRATED CIRCUITS)
IC1501	SILA7007S++++	IC LA7007S
		(TRANSISTORS)
Q1501	SF2K152+++1++	FET 2SK152 1
or	SF2K152+++2++	FET 2SK152 2
or	SF2K152+++3++	FET 2SK152 3
Q1502	SF2K152+++1++	FET 2SK152 1
or	SF2K152+++2++	FET 2SK152 2
or	SF2K152+++3++	FET 2SK152 3
Q1503	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q1504	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q1505	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q1506	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1507	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1509	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1510	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1511	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1512	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1513	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1514	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1515	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
Q1516	STC930+D+++++	TR 2SC930 D
or	STC930+E+++++	TR 2SC930 E
		(DIODES)
D1501	SD1SS133++++T	DIODE 1SS133
D1502	SD1SS133++++T	DIODE 1SS133
D1503	SD1SS133++++T	DIODE 1SS133
D1504	SD1SS133++++T	DIODE 1SS133
D1505	SD1SS133++++T	DIODE 1SS133
D1506	SD1SS133++++T	DIODE 1SS133
D1507	SD1SS133++++T	DIODE 1SS133
		(CAPACITORS)
C1501	CE+10226MR++L	ELECT 22MF 10V M R
C1502	CB+25103NAXRS	BC CON 0.01MF 25V N A XR
C1503	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1504	CC+50020CRSLL	CERAMIC 2PF 50V C R SL
C1505	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1506	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1507	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1508	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1509	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1510	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1511	CC+50020CDSLS	CERAMIC 2PF 50V C D SL
C1512	CB+25103NAXRS	BC CON 0.01MF 25V N A XR
C1513	CB+25472KRXRL	BC CON 0.0047MF 25V K R XR
C1514	CE+10226MR++L	ELECT 22MF 10V M R
C1515	CC+50470JRSLL	CERAMIC 47PF 50V J R SL
C1516	CC+50470JRSLL	CERAMIC 47PF 50V J R SL
C1517	CC+50821JRSLL	CERAMIC 820PF 50V J R SL
C1518	CC+50121JRSLL	CERAMIC 120PF 50V J R SL
C1519	CC+50101JRSLL	CERAMIC 100PF 50V J R SL
C1520	CB+25472KRXRL	BC CON 0.0047MF 25V K R XR
C1521	CE+10107MR++L	ELECT 100MF 10V M R
C1523	CC+50241JRSLL	CERAMIC 240PF 50V J R SL
C1524	CC+50471JRSLL	CERAMIC 470PF 50V J R SL
C1525	CC+50471JRSLL	CERAMIC 470PF 50V J R SL

Schematic Location	Parts No.	Description
C1526	CC+50471JRSLL	CERAMIC 470PF 50V J R SL
C1527	CC+50820JRSLL	CERAMIC 82PF 50V J R SL
C1528	CC+50471JRSLL	CERAMIC 470PF 50V J R SL
C1530	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1531	CE+10107MR++L	ELECT 100MF 10V M R
C1532	CC+50331JRSLL	CERAMIC 330PF 50V J R SL
C1533	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1534	CB+25473KRXRL	BC CON 0.047MF 25V K R XR
C1535	CE+10226MR++L	ELECT 22MF 10V M R
C1536	CB+25473KRXRL	BC CON 0.047MF 25V K R XR
C1537	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1538	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1540	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1541	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1542	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1543	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1544	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1545	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1546	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C1547	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C1548	CB+25473KRXRL	BC CON 0.047MF 25V K R XR
C1549	CC+50331JRSLL	CERAMIC 330PF 50V J R SL
C1550	CC+50471JRSLL	CERAMIC 470PF 50V J R SL
C1551	CB+25473KDXRS	BC CON 0.047MF 25V K D XR
C1552	CB+25473KDXRS	BC CON 0.047MF 25V K D XR
		(RESISTORS)
R1501	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R1502	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R1503	RC/+6621JT+++	CARBON T 620 OHM J 1/6W
R1504	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R1505	RC/+6391JT+++	CARBON T 390 OHM J 1/6W
R1506	RC/+6391JT+++	CARBON T 390 OHM J 1/6W
R1507	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R1508	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R1509	RC/+6391JT+++	CARBON T 390 OHM J 1/6W
R1536	RC/+4103JP++R	CARBON P 10K OHM J1/4WR25
R1537	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R1542	RC/+6122JT+++	CARBON T 1.2K OHM J 1/6W
R1543	RF/+48R2JPFPR	FP-CARBON P 8.2 J1/4W R25
R1544	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R1545	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R1546	RC/+6391JT+++	CARBON T 390 OHM J 1/6W
R1547	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R1548	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R1549	RC/+4102JP++R	CARBON P 1K OHM J1/4WR25
R1550	RC/+6621JT+++	CARBON T 620 OHM J 1/6W
R1551	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R1552	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R1553	RF/+48R2JPFPR	FP-CARBON P 8.2 J1/4W R25
R1554	RC/+6622JT+++	CARBON T 6.2K OHM J 1/6W
R1555	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R1556	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R1557	RC/+6331JT+++	CARBON T 330 OHM J 1/6W
R1558	RC/+6132JT+++	CARBON T 1.3K OHM J 1/6W
R1559	RC/+6622JT+++	CARBON T 6.2K OHM J 1/6W
R1560	RC/+6622JT+++	CARBON T 6.2K OHM J 1/6W
R1561	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R1562	RC/+6911JT+++	CARBON T 910 OHM J 1/6W
R1563	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R1564	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R1565	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R1566	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R1567	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R1568	RF/+4560JPFPR	FP-CARBON P 56 J 1/4W R25
R1569	RF/+4390JPFPR	FP-CARBON P 39 J 1/4W R25
R1570	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R1571	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R1572	RC/+6201JT+++	CARBON T 200 OHM J 1/6W
R1573	RC/+6511JT+++	CARBON T 510 OHM J 1/6W
R1574	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R1575	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W

Schematic Location	Parts No.	Description
R1576	RF/+4560JPFPR	FP-CARBON P 56 J 1/4W R25
R1577	RF/+4390JPFPR	FP-CARBON P 39 J 1/4W R25
R1578	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R1579	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R1580	RC/+6201JT+++	CARBON T 200 OHM J 1/6W
R1581	RC/+6511JT+++	CARBON T 510 OHM J 1/6W
R1582	RC/+4122JP++R	CARBON P 1.2KOHM J1/4WR25
R1583	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W

AD-1 P.C.B.(VIDEO & AUDIO)

ASSY.NO.143-0-230V-36900

Schematic Location	Parts No.	Description
		(MISCELLANEOUS)
CR2001	1 227V 14400	CR PACK
CR2002	4 227V 14500	CR PACK
CR2003	4 227V 14600	CR PACK
CR2004	4 227V 14700	CR PACK
CR2005	4 227V 14800	CR PACK
CR2006	4 227V 14900	CR PACK
CR2007	4 227V 14900	CR PACK
CR2008	4 227V 15000	CR PACK
CR2009	4 227V 15000	CR PACK
CR2400	4 227V 15100	CR PACK
CR2401	4 227V 15200	CR PACK
CR2402	4 227V 15300	CR PACK
CR2403	4 227V 14300	CR PACK
CR2500	4 227V 15100	CR PACK
CR2501	4 227V 15200	CR PACK
CR2502	4 227V 15300	CR PACK
CR2503	4 227V 14300	CR PACK
F2200	4 953V 11500	FILTER
F2201	4 953V 11600	FILTER
F2300	4 953V 11700	FILTER
F2301	4 953V 11800	FILTER
F2400	4 953V 09101	FILTER
F2401	4 953V 09201	FILTER
F2402	4 953V 12100	FILTER
F2500	4 953V 09301	FILTER
F2501	4 953V 09401	FILTER
F2502	4 953V 12100	FILTER
RY2001	4 232V 16600	RELAY
X2600	4 225V 21200	CRYSTAL
		(VARIABLE RESISTORS)
VR2200	4 222V 65615	22K OHM
VR2300	4 222V 65615	22K OHM
VR2400	4 222V 65615	22K OHM
VR2401	4 222V 65613	10K OHM
VR2402	4 222V 65601	100 OHM
VR2403	4 222V 65607	1K OHM
VR2404	4 222V 65607	1K OHM
VR2500	4 222V 65615	22K OHM
VR2501	4 222V 65613	10K OHM
VR2502	4 222V 65601	100 OHM
VR2503	4 222V 65607	1K OHM
VR2504	4 222V 65607	1K OHM
SVR2001	4 222V 65622	330K OHM
SVR2002	4 222V 65613	10K OHM
		(COILS)
L2001	4 253V 95600	HF CHOKE 27MH
L2002	4 253V 96900	HF CHOKE 7MH
L2003	4 253V 95800	HF CHOKE 27MH
L2004	4 253V 84110	HF CHOKE 560UH
L2200	4 253V 85819	HF CHOKE 33UH
L2201	4 253V 85819	HF CHOKE 33UH
L2202	4 253V 85925	HF CHOKE 100UH

Schematic Location	Parts No.	Description
L2203	4 253V 85925	HF CHOKE 100UH
L2204	4 253V 85810	HF CHOKE 5.6UH
L2300	4 253V 85818	HF CHOKE 27UH
L2301	4 253V 85818	HF CHOKE 27UH
L2302	4 253V 85925	HF CHOKE 100UH
L2303	4 253V 85925	HF CHOKE 100UH
L2304	4 253V 85809	HF CHOKE 4.7UH
L2400	4 253V 95600	HF CHOKE 27MH
L2500	4 253V 95600	HF CHOKE 27MH
L2600	4 253V 85827	HF CHOKE 150UH
L2601	4 253V 85925	HF CHOKE 100UH
L2602	4 253V 85925	HF CHOKE 100UH
L2603	4 253V 85925	HF CHOKE 100UH
L2604	4 253V 85830	HF CHOKE 270UH
		(COIL TRANSFORMERS)
T2001	4 258V 14740	OSC COIL
T2400	4 253V 70500	HF CHOKE
T2500	4 253V 70600	HF CHOKE
		(INTEGRATED CIRCUITS)
IC2001	SIBU4066B++++	IC BU4066B
or	SITC4016BP+++	IC TC4016BP
or	SITC4066BP+++	IC TC4066BP
or	SITC4066BP+++	IC TC4066BP
IC2003	SILA3220+++++	IC LA3220 DIP14
IC2004	SINJM4562S+++	IC NJM4562S
IC2005	SIBU4066B++++	IC BU4066B
or	SITC4066BP+++	IC TC4066BP
or	SITC4066BP+++	IC TC4066BP
IC2007	SILA7042+++++	IC LA7042
IC2008	SIHD14052++++	IC HD14052
or	SIMC14052BCP+	IC MC14052BCP
IC2009	SINJD6506S+++	IC NJD6506S
IC2010	SIMC14070BCP+	IC MC14070BCP
or	SITC4030BP+++	IC TC4030BP
IC2200	SIAN612++++++	IC AN612
IC2201	SIAN612++++++	IC AN612
IC2202	SILA7016+++++	IC LA7016
IC2203	SIAN304++++++	IC AN304
IC2204	SIHD74LS122P+	IC HD74LS122P
or	SISN74LS122++	IC SN74LS122
IC2205	SINJM4560D+++	IC NJM4560D DIP8
IC2206	SILA6458S++++	IC LA6458S
or	SINJM4558S+++	IC NJM4558S
IC2300	SIAN612++++++	IC AN612
IC2301	SIAN612++++++	IC AN612
IC2302	SILA7016+++++	IC LA7016
IC2303	SIAN304++++++	IC AN304
IC2304	SIHD74LS122P+	IC HD74LS122P
or	SISN74LS122++	IC SN74LS122
IC2305	SINJM4560D+++	IC NJM4560D DIP8
IC2400	SILA7016+++++	IC LA7016
IC2401	SILA7016+++++	IC LA7016
IC2402	SICX20083++++	IC CX20083
IC2403	SINJM4558D+++	IC NJM4558D
IC2405	SIBA7050L++++	IC BA7050L
IC2500	SILA7016+++++	IC LA7016
IC2501	SILA7016+++++	IC LA7016
IC2502	SICX20083++++	IC CX20083
IC2505	SIBA7050L++++	IC BA7050L
IC2600	SINJM78L05A++	IC NJM78L05A
IC2601	SIBU2702+++++	IC BU2702
IC2602	SILA7016+++++	IC LA7016
IC2603	SIBA401++++++	IC BA401
IC2604	SITC4030BP+++	IC TC4030BP
IC2605	SIHD14011BP++	IC HD14011BP
or	SILC4011B++++	IC LC4011B
or	SITC4011BP+++	IC TC4011BP

Schematic Location	Parts No.	Description
		(TRANSISTORS)
Q2001	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2002	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2003	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
or	STC3399++++++	TR 2SC3399
Q2004	STC536+F+++++	TR 2SC536 F
Q2005	STB544+E+++++	TR 2SB544 E
Q2006	STC536+F+++++	TR 2SC536 F
Q2007	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
or	STC3399++++++	TR 2SC3399
Q2008	STA1016F+++++	TR 2SA1016 F
or	STA1016G+++++	TR 2SA1016 G
Q2009	STC3495+++++	TR 2SC3495
or	STD1011R+++++	TR 2SD1011 R
or	STD1011S+++++	TR 2SD1011 S
or	STD1011T+++++	TR 2SD1011 T
Q2010	STC3495++++++	TR 2SC3495
or	STD1011R+++++	TR 2SD1011 R
or	STD1011S+++++	TR 2SD1011 S
or	STD1011T+++++	TR 2SD1011 T
Q2011	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
or	STC3399++++++	TR 2SC3399
Q2012	SRC144N++++++	TR MD DTC144N
Q2013	STD438+F+++++	TR 2SD438 F
Q2015	SRC144N++++++	TR MD DTC144N
Q2016	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
Q2017	STC945+P+++A+	TR 2SC945A P
or	STD545+E+++++	TR 2SD545 E
Q2018	STC945+P+++A+	TR 2SC945A P
or	STD545+E+++++	TR 2SD545 E
Q2020	STA1346++++++	TR 2SA1346
Q2021	SRC144N++++++	TR MD DTC144N
Q2023	SRC144N++++++	TR MD DTC144N
Q2024	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
Q2025	STA1346++++++	TR 2SA1346
Q2026	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
Q2027	STA1346++++++	TR 2SA1346
Q2028	STC3402++++++	TR 2SC3402
Q2029	SF2K304+++E++	FET 2SK304 E
Q2031	SRC144N++++++	TR MD DTC144N
or	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
or	STC3399++++++	TR 2SC3399
Q2032	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
Q2033	STB544+E+++++	TR 2SB544 E
Q2035	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
or	STC3399++++++	TR 2SC3399
Q2040	STD13874+++++	TR 2SD1387 4
Q2101	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2102	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2201	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2202	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2203	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2204	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2205	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2206	STC930+E++++1	TR 2SC930 E SP

Schematic Location	Parts No.	Description
Q2206	STC930+F++++1	TR 2SC930 F SP
Q2207	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2208	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2209	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2211	SF2K121+++2++	FET 2SK121 2
or	SF2K121+++3++	FET 2SK121 3
or	SF2K121+++4++	FET 2SK121 4
or	SF2K121+++5++	FET 2SK121 5
or	SF2K121+++6++	FET 2SK121 6
or	SF2K68++A+K++	FET 2SK68 A K
or	SF2K68++A+L++	FET 2SK68 A L
or	SF2K68++A+M++	FET 2SK68 A M
Q2301	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2302	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2303	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2304	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2305	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2306	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2307	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2308	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2309	STC930+E++++1	TR 2SC930 E SP
or	STC930+F++++1	TR 2SC930 F SP
Q2311	SF2K121+++2++	FET 2SK121 2
or	SF2K121+++3++	FET 2SK121 3
or	SF2K121+++4++	FET 2SK121 4
or	SF2K121+++5++	FET 2SK121 5
or	SF2K121+++6++	FET 2SK121 6
or	SF2K68++A+K++	FET 2SK68 A K
or	SF2K68++A+L++	FET 2SK68 A L
or	SF2K68++A+M++	FET 2SK68 A M
Q2400	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2401	STA608+E++++1	TR 2SA608 E SP
or	STA608+F++++1	TR 2SA608 F SP
Q2402	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2403	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2404	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2405	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q2406	SF2K121+++2++	FET 2SK121 2
or	SF2K121+++3++	FET 2SK121 3
or	SF2K121+++4++	FET 2SK121 4
or	SF2K121+++5++	FET 2SK121 5
or	SF2K121+++6++	FET 2SK121 6
or	SF2K68++A+K++	FET 2SK68 A K
or	SF2K68++A+L++	FET 2SK68 A L
or	SF2K68++A+M++	FET 2SK68 A M
Q2407	STC3399++++++	TR 2SC3399
Q2500	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2501	STA608+E++++1	TR 2SA608 E SP
or	STA608+F++++1	TR 2SA608 F SP
Q2502	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2503	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q2504	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F

Schematic Location	Parts No.	Description
Q2505	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q2506	SF2K121+++2++	FET 2SK121 2
or	SF2K121+++3++	FET 2SK121 3
or	SF2K121+++4++	FET 2SK121 4
or	SF2K121+++5++	FET 2SK121 5
or	SF2K121+++6++	FET 2SK121 6
or	SF2K68++A+K++	FET 2SK68 A K
or	SF2K68++A+L++	FET 2SK68 A L
or	SF2K68++A+M++	FET 2SK68 A M
Q2507	STC3399++++++	TR 2SC3399
Q2600	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2601	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2602	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2603	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2604	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2605	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2606	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2607	STA608+E++++1	TR 2SA608 E SP
or	STA608+F++++1	TR 2SA608 F SP
Q2608	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2609	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2610	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2611	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2612	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
Q2613	STB598+E+++++	TR 2SB598 E
or	STB598+F+++++	TR 2SB598 F
Q2614	STC536+E++++1	TR 2SC536 E SP
or	STC536+F++++1	TR 2SC536 F SP
		(DIODES)
D2001	SD1SS133++++T	DIODE 1SS133
D2002	SD1SS133++++T	DIODE 1SS133
D2003	SD1SS133++++T	DIODE 1SS133
D2004	SD1SS133++++T	DIODE 1SS133
D2005	SD1SS133++++T	DIODE 1SS133
D2007	SD1SS133++++T	DIODE 1SS133
D2008	SD1SS133++++T	DIODE 1SS133
D2011	SD1SS133++++T	DIODE 1SS133
D2012	SD1SS133++++T	DIODE 1SS133
D2013	SD1SS133++++T	DIODE 1SS133
D2014	SD1SS133++++T	DIODE 1SS133
D2015	SD1SS133++++T	DIODE 1SS133
D2016	SD1SS133++++T	DIODE 1SS133
D2017	SD1SS133++++T	DIODE 1SS133
D2018	SD1SS133++++T	DIODE 1SS133
D2021	SD1SS133++++T	DIODE 1SS133
D2022	SD1SS133++++T	DIODE 1SS133
D2023	4 202V 14300	DIODE DAN401
D2024	SD1SS133++++T	DIODE 1SS133
D2026	SD1SS133++++T	DIODE 1SS133
D2028	SD1SS133++++T	DIODE 1SS133
D2029	SD1SS133++++T	DIODE 1SS133
D2030	SD1SS133++++T	DIODE 1SS133
D2035	SD1SS133++++T	DIODE 1SS133
D2036	SD1SS133++++T	DIODE 1SS133
D2037	SD1SS133++++T	DIODE 1SS133
D2101	SD1SS133++++T	DIODE 1SS133
D2102	SD1SS133++++T	DIODE 1SS133
D2200	SDGZA047Z++++	ZENER DIODE GZA4.7Z
or	SDGZA051Y++++	ZENER DIODE GZA5.1Y

Schematic Location	Parts No.	Description
D2201	SDGZA056Y++++	ZENER DIODE GZA5.6Y
or	SDGZA056Z++++	ZENER DIODE GZA5.6Z
D2203	SD1SS133++++T	DIODE 1SS133 T
D2204	SD1SS133++++T	DIODE 1SS133 T
D2300	SDGZA047Z++++	ZENER DIODE GZA4.7Z
or	SDGZA051Y++++	ZENER DIODE GZA5.1Y
D2301	SDGZA056Y++++	ZENER DIODE GZA5.6Y
or	SDGZA056Z++++	ZENER DIODE GZA5.6Z
D2303	SD1SS133++++T	DIODE 1SS133
D2304	SD1SS133++++T	DIODE 1SS133
D2400	SD1SS133++++T	DIODE 1SS133
D2401	SD1SS133++++T	DIODE 1SS133
D2402	SD1SS133++++T	DIODE 1SS133
D2403	SDGZA043Y++++	ZENER DIODE GZA4.3Y
D2404	SDGZA068X++++	ZENER DIODE GZA6.8X
or	SDGZA068Y++++	ZENER DIODE GZA6.8Y
D2500	SD1SS133++++T	DIODE 1SS133
D2501	SD1SS133++++T	DIODE 1SS133
D2502	SD1SS133++++T	DIODE 1SS133
D2503	SDGZA043Y++++	ZENER DIODE GZA4.3Y
D2600	SD1SS133++++T	DIODE 1SS133
D2601	SD1SS133++++T	DIODE 1SS133
D2602	SD1SS133++++T	DIODE 1SS133
D2603	SD1SS133++++T	DIODE 1SS133
D2605	SDGZA043Y++++	ZENER DIODE GZA4.3Y
		(CAPACITORS)
C2001	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2002	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2003	CE+10476MRHAL	ELECT 47MF 10V M R HA
C2004	CC+50390JRSLL	CERAMIC 39PF 50V J R SL
C2005	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2006	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2007	CC+50271KRYBL	CERAMIC 270PF 50V K R YB
C2008	CE+10476MRHAL	ELECT 47MF 10V M R HA
C2009	CE+50474MRHAL	ELECT 0.47MF 50V M R HA
C2010	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2011	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2012	CE+10476MRHAL	ELECT 47MF 10V M R HA
C2013	CE+10107MRHAL	ELECT 100MF 10V M R HA
C2014	CE+10476MRHAL	ELECT 47MF 10V M R HA
C2015	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2016	CE+10336MRHAL	ELECT 33MF 10V M R HA
C2017	CE+10476MRHAL	ELECT 47MF 10V M R HA
C2018	CE+10107MVHAS	ELECT 100MF 10V M V HA
C2019	CE+10336MRHAL	ELECT 33MF 10V M R HA
C2020	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2021	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2022	CE+10476MRHAL	ELECT 47MF 10V M R HA
C2023	CE+10336MRHAL	ELECT 33MF 10V M R HA
C2024	CE+10107MRHAL	ELECT 100MF 10V M R HA
C2025	CB+25122KRXRL	BC CON 0.0012MF 25V K R XR
C2026	CE+50475MVAKS	ELECT 4.7MF 50V M V AK
C2027	CE+50474MRHAL	ELECT 0.47MF 50V M R HA
C2028	CB+25123KRXRL	BC CON 0.012MF 25V K R XR
C2029	CE+50475MRHAL	ELECT 4.7MF 50V M R HA
C2030	CE+50475MRHAL	ELECT 4.7MF 50V M R HA
C2031	CB+25822KRXRL	BC CON 0.0082MF 25V K R XR
C2032	CE+10107MRHAL	ELECT 100MF 10V M R HA
C2033	CE+50105MR++L	ELECT 1MF 50V M R
C2034	CC+50331KRYBL	CERAMIC 330PF 50V K R YB
C2035	CE+50475MRHAL	ELECT 4.7MF 50V M R HA
C2036	CE+50474MVHAS	ELECT 0.47MF 50V M V HA
C2037	CE+10476MRHAL	ELECT 47MF 10V M R HA
C2038	CE+10226MRHAL	ELECT 22MF 10V M R HA
C2039	CB+25273KRXRL	BC CON 0.027MF 25V K R XR
C2040	CB+25183KRXRL	BC CON 0.018MF 25V K R XR
C2041	CE+50475MRHAL	ELECT 4.7MF 50V M R HA
C2042	CE+50475MRHAL	ELECT 4.7MF 50V M R HA
C2043	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2044	CE+50225MRHAL	ELECT 2.2MF 50V M R HA
C2045	CC+50201JRSLL	CERAMIC 200PF 50V J R SL

Schematic Location	Parts No.	Description
C2046	CN100183JM++S	P P CON 0.018MF 100V J M
C2047	CC+50221KRYBL	CERAMIC 220PF 50V K R YB
C2048	CE+25475MRPBL	ELECT 4.7MF 25V M PB R
C2049	CB+25333KRXRL	BC CON 0.033MF 25V K R XR
C2050	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2051	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2052	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2053	CE+50105MR++L	ELECT 1MF 50V M R
C2055	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2056	CE+50225MRHAL	ELECT 2.2MF 50V M R HA
C2057	CE+50225MRHAL	ELECT 2.2MF 50V M R HA
C2058	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2059	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2061	CE+50225MRHAL	ELECT 2.2MF 50V M R HA
C2063	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2064	CB+25152KRXRL	BC CON 0.0015MF 25V K R XR
C2065	CE+16106MVAKS	ELECT 10MF 16V M V AK
C2066	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2068	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2070	CE+10227MVASS	ELECT 220MF 10V M V AS
C2071	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2072	CE+10226MVAKS	ELECT 22MF 10V M V AK
C2073	CC+50103ZRYFL	CERAMIC 0.01MF 50V Z R YF
C2074	CC+50103ZRYFL	CERAMIC 0.01MF 50V Z R YF
C2076	CE+50475MVASS	ELECT 4.7MF 50V M V AS
C2101	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2105	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2106	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2107	CC+50271KRYBL	CERAMIC 270PF 50V K R YB
C2108	CE+10476MRHAL	ELECT 47MF 10V M R HA
C2109	CE+50474MRHAL	ELECT 0.47MF 50V M R HA
C2110	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2111	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2116	CE+10336MRHAL	ELECT 33MF 10V M R HA
C2118	CE+10107MVHAS	ELECT 100MF 10V M V HA
C2119	CE+10336MRHAL	ELECT 33MF 10V M R HA
C2120	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2121	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2158	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2159	CE+16106MRHAL	ELECT 10MF 16V M R HA
C2200	CC+50102KRYBL	CERAMIC 0.001MF 50V K R YB
C2202	CC+50391JRSLL	CERAMIC 390PF 50V J R SL
C2203	CC+50561JDSLS	CERAMIC 560PF 50V J D SL
C2204	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2205	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2206	CB+25223KDXRS	BC CON 0.022MF 25V K D XR
C2207	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2208	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2209	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2210	CC+50102KRYBL	CERAMIC 0.001MF 50V K R YB
C2212	CC+50331JRSLL	CERAMIC 330PF 50V J R SL
C2213	CC+50561JDSLS	CERAMIC 560PF 50V J D SL
C2214	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2215	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2216	CB+25223KDXRS	BC CON 0.022MF 25V K D XR
C2217	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2218	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2219	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2220	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2221	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C2222	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2223	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2224	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2225	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2226	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2227	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2228	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2229	CC+50101KRYBL	CERAMIC 100PF 50V K R YB
C2230	CC+50101JRSLL	CERAMIC 100PF 50V J R SL
C2231	CE6R3107MRAKL	ELECT 100MF 6.3V M R AK
C2232	CB+25473KRXRL	BC CON 0.047MF 25V K R XR
C2233	CC+50101JRSLL	CERAMIC 100PF 50V J R SL
C2234	CC+50270JRSLL	CERAMIC 27PF 50V J R SL

Schematic Location	Parts No.	Description
C2235	CC+50151KRYBL	CERAMIC 150PF 50V K R YB
C2236	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2237	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2239	CC+50471KRYBL	CERAMIC 470PF 50V K R YB
C2240	CE+10476MVAKS	ELECT 47MF 10V M V AK
C2241	CM+50104JG++S	MYLAR 0.1MF 50V J G
C2242	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2243	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2244	CE+16106MRAKL	ELECT 10MF 16V M R AK
C2245	CM+50122JG++S	MYLAR 0.0012MF 50V J G
C2250	CE+10226MRAKL	ELECT 22MF 10V M R AK
C2251	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2252	CC+50221KRYBL	CERAMIC 220PF 50V K R YB
C2253	CE+10336MVAKS	ELECT 33MF 10V M V AK
C2254	CE+10476MVAKS	ELECT 47MF 10V M V AK
C2300	CC+50102KRYBL	CERAMIC 0.001MF 50V K R YB
C2302	CC+50331JRSLL	CERAMIC 330PF 50V J R SL
C2303	CC+50561JDSLS	CERAMIC 560PF 50V J D SL
C2304	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2305	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2306	CB+25223KDXRS	BC CON 0.022MF 25V K D XR
C2307	CB+25103KDXRS	BC CON 0.01MF 25V K D XR
C2308	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2309	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2310	CC+50102KRYBL	CERAMIC 0.001MF 50V K R YB
C2312	CC+50271JRSLL	CERAMIC 270PF 50V J R SL
C2313	CC+50561JDSLS	CERAMIC 560PF 50V J D SL
C2314	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2315	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2316	CB+25223KDXRS	BC CON 0.022MF 25V K D XR
C2317	CB+25103KDXRS	BC CON 0.01MF 25V K D XR
C2318	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2319	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2320	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2321	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C2322	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2323	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2324	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2325	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2326	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2327	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2328	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2329	CC+50101KRYBL	CERAMIC 100PF 50V K R YB
C2330	CC+50820JRSLL	CERAMIC 82PF 50V J R SL
C2331	CE6R3107MVAKS	ELECT 100MF 6.3V M V AK
C2332	CB+25473KRXRL	BC CON 0.047MF 25V K R XR
C2333	CC+50101JRSLL	CERAMIC 100PF 50V J R SL
C2334	CC+50270JRSLL	CERAMIC 27PF 50V J R SL
C2335	CC+50151KRYBL	CERAMIC 150PF 50V K R YB
C2336	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2337	CE+10476MVAKS	ELECT 47MF 10V M V AK
C2339	CC+50471KRYBL	CERAMIC 470PF 50V K R YB
C2340	CE+10476MVAKS	ELECT 47MF 10V M V AK
C2341	CM+50104JG++S	MYLAR 0.1MF 50V J G
C2342	CE+16226MVAKS	ELECT 22MF 16V M V AK
C2343	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2344	CE+16106MRAKL	ELECT 10MF 16V M R AK
C2345	CM+50102JG++S	MYLAR 0.001MF 50V J G
C2350	CE+10226MRAKL	ELECT 22MF 10V M R AK
C2352	CC+50221KRYBL	CERAMIC 220PF 50V K R YB
C2353	CE+10336MVAKS	ELECT 33MF 10V M V AK
C2354	CE+10476MVAKS	ELECT 47MF 10V M V AK
C2400	CE+16106MRAKL	ELECT 10MF 16V M R AK
C2401	CE+10226MRAKL	ELECT 22MF 10V M R AK
C2403	CE+16226MVAKS	ELECT 22MF 16V M V AK
C2404	CE+10226MRAKL	ELECT 22MF 10V M R AK
C2405	CE6R3476MRAKL	ELECT 47MF 6.3V M R AK
C2406	CC+50101KRYBL	CERAMIC 100PF 50V K R YB
C2407	CM+50102JG++S	MYLAR 0.001MF 50V J G
C2408	CT+16105KKD+S	TANTAL 1MF 16V K K D
C2409	CT+16106KKD+S	TANTAL 10MF 16V K K D
C2410	CT+16155KKD+S	TANTAL 1.5MF 16V K K D

Schematic Location	Parts No.	Description
C2411	CE6R3227MVHAS	ELECT 220MF 6.3V M V HA
C2412	CM+50153JG++S	MYLAR 0.015MF 50V J G
C2413	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2414	CM+50153JG++S	MYLAR 0.015MF 50V J G
C2415	CM+50563JG++S	MYLAR 0.056MF 50V J G
C2416	CM+50683JG++S	MYLAR 0.068MF 50V J G
C2417	CE+16106MVAKS	ELECT 10MF 16V M V AK
C2418	CE+16226MVAKS	ELECT 22MF 16V M V AK
C2419	CM+50332JG++S	MYLAR 0.0033MF 50V J G
C2421	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2422	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2423	CE6R3107MVAKS	ELECT 100MF 6.3V M V AK
C2424	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2425	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2427	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2430	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C2431	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2432	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2433	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2434	CE+10336MVAKS	ELECT 33MF 10V M V AK
C2435	CC+50680JRCHL	CERAMIC 68PF 50V J R CH
C2436	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2437	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2438	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2439	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2440	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2441	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2442	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2443	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2444	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2450	CM+50222JG++S	MYLAR 0.0022MF 50V J G
C2451	CC+50331KRYBL	CERAMIC 330PF 50V K R YB
C2500	CE+16106MRAKL	ELECT 10MF 16V M R AK
C2501	CE+10226MRAKL	ELECT 22MF 10V M R AK
C2503	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2504	CE+10226MRAKL	ELECT 22MF 10V M R AK
C2505	CE6R3476MRAKL	ELECT 47MF 6.3V M R AK
C2506	CC+50101KRYBL	CERAMIC 100PF 50V K R YB
C2507	CM+50102JG++S	MYLAR 0.001MF 50V J G
C2508	CT+16105KKD+S	TANTAL 1MF 16V K K D
C2509	CT+16106KKD+S	TANTAL 10MF 16V K K D
C2510	CT+16155KKD+S	TANTAL 1.5MF 16V K K D
C2511	CE6R3227MVHAS	ELECT 220MF 6.3V M V HA
C2512	CM+50153JG++S	MYLAR 0.015MF 50V J G
C2513	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2514	CM+50153JG++S	MYLAR 0.015MF 50V J G
C2515	CM+50563JG++S	MYLAR 0.056MF 50V J G
C2516	CM+50683JG++S	MYLAR 0.068MF 50V J G
C2517	CE+16106MVAKS	ELECT 10MF 16V M V AK
C2518	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2519	CM+50332JG++S	MYLAR 0.0033MF 50V J G
C2522	CE+10476MVAKS	ELECT 47MF 10V M V AK
C2523	CE6R3107MRAKL	ELECT 100MF 6.3V M R AK
C2524	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2525	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2527	CE+10476MRAKL	ELECT 47MF 10V M R AK
C2530	CB+25223KRXRL	BC CON 0.022MF 25V K R XR
C2531	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2532	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2535	CC+50620JRCHL	CERAMIC 62PF 50V J R CH
C2536	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2537	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2538	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2539	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2540	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2541	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2542	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2543	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2544	CE+16226MRAKL	ELECT 22MF 16V M R AK
C2550	CM+50222JG++S	MYLAR 0.0022MF 50V J G
C2551	CC+50331KRYBL	CERAMIC 330PF 50V K R YB
C2600	CE+16107MVASS	ELECT 100MF 16V M V AS
C2601	CB+25473KRXRL	BC CON 0.047MF 25V K R XR

Schematic Location	Parts No.	Description
C2602	CB+25473KRXRL	BC CON 0.047MF 25V K R XR
C2603	CE+10226MVAKS	ELECT 22MF 10V M V AK
C2604	CC+50271JDCHS	CERAMIC 270PF 50V J D CH
C2605	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2606	CE+10226MRAKL	ELECT 22MF 10V M R AK
C2607	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2608	CE+10226MRAKL	ELECT 22MF 10V M R AK
C2610	CC+50102KRYBL	CERAMIC 0.001MF 50V K R YB
C2611	CC+50102KRYBL	CERAMIC 0.001MF 50V K R YB
C2612	CC+50390JRSLL	CERAMIC 39PF 50V J R SL
C2613	CE+25475MRAKL	ELECT 4.7MF 25V M R AK
C2614	CC+50102KRYBL	CERAMIC 0.001MF 50V K R YB
C2615	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C2616	CC+50471KRYBL	CERAMIC 470PF 50V K R YB
C2617	CE+16106MVAKS	ELECT 10MF 16V M V AK
C2618	CC+50471KRYBL	CERAMIC 470PF 50V K R YB
C2619	CC+50220JRSLL	CERAMIC 22PF 50V J R SL
C2620	CC+50470JRSLL	CERAMIC 47PF 50V J R SL
C2621	CE+10336MVAKS	ELECT 33MF 10V M V AK
C2622	CC+50471KRYBL	CERAMIC 470PF 50V K R YB
C2626	CC+50471JDSLS	CERAMIC 470PF 50V J D SL
C2627	CE+50105MVAKS	ELECT 1MF 50V M V AK
C2628	CE+16476MVAKS	ELECT 47MF 16V M V AK
C2629	CB+12104MDXRS	BC CON 0.1MF 12V M D XR
C2630	CE+16106MRAKL	ELECT 10MF 16V M R AK
C2631	CE+35335MRAKL	ELECT 3.3MF 35V M R AK
C2632	CE+16476MVAKS	ELECT 47MF 16V M V AK
C2633	CB+25473KRXRL	BC CON 0.047MF 25V K R XR
C2634	CE+16476MVAKS	ELECT 47MF 16V M V AK
C2635	CB+25473KRXRL	BC CON 0.047MF 25V K R XR
C2636	CE+16107MRASL	ELECT 100MF 16V M R AS
C2640	CC+50240JRSLL	CERAMIC 24PF 50V J R SL
C2641	CC+50180JRSLL	CERAMIC 18PF 50V J R SL
C2642	CC+50221JDCHS	CERAMIC 220PF 50V J D CH
C2643	CE+16336MVAKS	ELECT 33MF 16V M V AK
C2644	CC+50201JDCHS	CERAMIC 200PF 50V J D CH
C2645	CC+50241JDCHS	CERAMIC 240PF 50V J D CH
		(RESISTORS)
R2001	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2003	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R2004	RC/+6224JT+++	CARBON T 220K OHM J 1/6W
R2005	RC/+6133JT+++	CARBON T 13K OHM J 1/6W
R2006	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2007	RC/+6683JT+++	CARBON T 68K OHM J 1/6W
R2008	RC/+6510JT+++	CARBON T 51 OHM J 1/6W
R2009	RC/+6513JT+++	CARBON T 51K OHM J 1/6W
R2010	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R2011	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R2012	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2013	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2014	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2015	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2018	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2021	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2022	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2023	RC/+6334JT+++	CARBON T 330K OHM J 1/6W
R2024	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2025	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R2026	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2028	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R2031	RC/+6560JT+++	CARBON T 56 OHM J 1/6W
R2032	RC/+6225JT+++	CARBON T 2.2M OHM J 1/6W
R2033	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R2034	RC/+6560JT+++	CARBON T 56 OHM J 1/6W
R2035	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R2036	RC/+6750JT+++	CARBON T 75 OHM J 1/6W
R2037	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2038	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R2039	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2040	RC/+6561JT+++	CARBON T 560 OHM J 1/6W
R2041	RC/+6333JT+++	CARBON T 33K OHM J 1/6W

Schematic Location	Parts No.	Description
R2042	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R2043	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2044	RC/+6362JT+++	CARBON T 3.6K OHM J 1/6W
R2045	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2046	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2047	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2048	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2049	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2051	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2052	RC/+6331JT+++	CARBON T 330 OHM J 1/6W
R2053	RC/+6151JT+++	CARBON T 150 OHM J 1/6W
R2054	RC/+6124JT+++	CARBON T 120K OHM J 1/6W
R2055	RC/+6123JT+++	CARBON T 12K OHM J 1/6W
R2056	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2057	RC/+6391JT+++	CARBON T 390 OHM J 1/6W
R2058	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2059	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R2060	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2061	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R2062	RC/+6225JT+++	CARBON T 2.2M OHM J 1/6W
R2063	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2064	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2065	RC/+6622JT+++	CARBON T 6.2K OHM J 1/6W
R2066	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R2067	RC/+6183JT+++	CARBON T 18K OHM J 1/6W
R2068	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2069	RC/+6910JT+++	CARBON T 91 OHM J 1/6W
R2070	RC/+6010JT+++	CARBON T 1 OHM J 1/6W
R2071	RC/+4100JT++R	CARBON T 10 OHM J1/4WR25
R2072	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2074	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2075	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2077	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2078	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2080	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R2081	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R2083	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2084	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2085	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2086	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
or	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2089	RC/+6102JV+++	CARBON V 1K OHM J 1/6W
R2098	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2101	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2103	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R2104	RC/+6224JT+++	CARBON T 220K OHM J 1/6W
R2105	RC/+6133JT+++	CARBON T 13K OHM J 1/6W
R2106	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2107	RC/+6683JT+++	CARBON T 68K OHM J 1/6W
R2108	RC/+6510JT+++	CARBON T 51 OHM J 1/6W
R2109	RC/+6513JT+++	CARBON T 51K OHM J 1/6W
R2110	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R2111	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R2112	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2113	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2114	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2115	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2118	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R2120	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2121	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2122	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2123	RC/+6334JT+++	CARBON T 330K OHM J 1/6W
R2124	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2125	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R2127	RC/+6105JT+++	CARBON T 1M OHM J 1/6W
R2128	RC/+6822JT+++	CARBON T 8.2K OHM J 1/6W
R2129	RC/+6394JT+++	CARBON T 390K OHM J 1/6W
R2130	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R2132	RC/+6222JV+++	CARBON V 2.2K OHM J 1/6W
R2133	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2134	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2135	RC/+6392JT+++	CARBON T 3.9K OHM J 1/6W
R2136	RC/+6822JT+++	CARBON T 8.2K OHM J 1/6W

Schematic Location	Parts No.	Description
R2137	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2138	RC/+6102JV+++	CARBON V 1K OHM J 1/6W
R2139	RC/+6302JT+++	CARBON T 3K OHM J 1/6W
R2142	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2150	RC/+6100JT+++	CARBON T 10 OHM J 1/6W
R2151	RC/+6221JV+++	CARBON V 220 OHM J 1/6W
R2152	RC/+6823JP+++	CARBON P 82K OHM J 1/6W
R2153	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2155	RC/+6102JP+++	CABON P 1K OHM J 1/6W
or	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2156	RC/+6154JT+++	CARBON T 150K OHM J 1/6W
R2157	RC/+6102JV+++	CARBON V 1K OHM J 1/6W
R2158	RC/+6102JV+++	CARBON V 1K OHM J 1/6W
R2159	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2160	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R2200	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R2201	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2202	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2203	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2204	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2205	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2206	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2207	RC/+6474JP+++	CARBON P 470K OHM J 1/6W
R2209	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2210	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2211	RC/+6680JT+++	CARBON T 68 OHM J 1/6W
R2212	RC/+6274JT+++	CARBON T 270K OHM J 1/6W
R2213	RC/+6512JT+++	CARBON T 5.1K OHM J 1/6W
R2214	RC/+6512JT+++	CARBON T 5.1K OHM J 1/6W
R2215	RC/+6154JT+++	CARBON T 150K OHM J 1/6W
R2216	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2217	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2220	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R2221	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2222	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2223	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2224	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2225	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2226	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2227	RC/+6474JP+++	CARBON P 470K OHM J 1/6W
R2229	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2230	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2231	RC/+6680JT+++	CARBON T 68 OHM J 1/6W
R2232	RC/+6274JT+++	CARBON T 270K OHM J 1/6W
R2233	RC/+6512JT+++	CARBON T 5.1K OHM J 1/6W
R2234	RC/+6512JT+++	CARBON T 5.1K OHM J 1/6W
R2235	RC/+6154JT+++	CARBON T 150K OHM J 1/6W
R2236	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2237	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2238	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2239	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2240	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2241	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R2242	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R2243	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2244	RC/+6392JT+++	CARBON T 3.9K OHM J 1/6W
R2245	RC/+6331JT+++	CARBON T 330 OHM J 1/6W
R2246	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2247	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2248	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R2249	RC/+6221JT+++	CARBON T 220 OHM J 1/6W
R2251	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R2252	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R2253	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R2254	RC/+6471JT+++	CARBON T 470 OHM J 1/6W
R2255	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2256	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2260	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2261	RC/+6272JT+++	CARBON T 2.7K OHM J 1/6W
R2262	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2263	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2264	RC/+6223JT+++	CARBON T 22K OHM J 1/6W

Schematic Location	Parts No.	Description
R2265	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R2266	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2267	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2268	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2270	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2271	RC/+6124JT+++	CARBON T 120K OHM J 1/6W
R2272	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2273	RC/+6822JT+++	CARBON T 8.2K OHM J 1/6W
R2274	RC/+6272JT+++	CARBON T 2.7K OHM J 1/6W
R2300	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R2301	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2302	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2303	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2304	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2305	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2306	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2307	RC/+6474JP+++	CARBON P 470K OHM J 1/6W
R2309	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2310	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2311	RC/+6680JT+++	CARBON T 68 OHM J 1/6W
R2312	RC/+6274JT+++	CARBON T 270K OHM J 1/6W
R2313	RC/+6512JT+++	CARBON T 5.1K OHM J 1/6W
R2314	RC/+6512JT+++	CARBON T 5.1K OHM J 1/6W
R2315	RC/+6154JT+++	CARBON T 150K OHM J 1/6W
R2316	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2317	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2320	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R2321	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2322	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2323	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2324	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2325	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2326	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2327	RC/+6474JP+++	CARBON P 470K OHM J 1/6W
R2329	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2330	RC/+6152JT+++	CARBON T 1.5K OHM J 1/6W
R2331	RC/+6680JT+++	CARBON T 68 OHM J 1/6W
R2332	RC/+6274JT+++	CARBON T 270K OHM J 1/6W
R2333	RC/+6512JT+++	CARBON T 5.1K OHM J 1/6W
R2334	RC/+6512JT+++	CARBON T 5.1K OHM J 1/6W
R2335	RC/+6154JT+++	CARBON T 150K OHM J 1/6W
R2336	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2337	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2338	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2339	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2340	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2341	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R2342	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R2343	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2344	RC/+6392JT+++	CARBON T 3.9K OHM J 1/6W
R2345	RC/+6331JT+++	CARBON T 330 OHM J 1/6W
R2346	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2347	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2348	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R2349	RC/+6221JT+++	CARBON T 220 OHM J 1/6W
R2351	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R2352	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R2353	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R2354	RC/+6471JT+++	CARBON T 470 OHM J 1/6W
R2355	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2356	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2360	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2361	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2362	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2363	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2364	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2365	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R2366	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2367	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2368	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2372	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2373	RC/+6822JT+++	CARBON T 8.2K OHM J 1/6W
R2374	RC/+6272JT+++	CARBON T 2.7K OHM J 1/6W

Schematic Location	Parts No.	Description
R2400	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2401	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2402	RC/+6163JT+++	CARBON T 16K OHM J 1/6W
R2405	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R2406	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2407	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2408	RC/+6752JT+++	CARBON T 7.5K OHM J 1/6W
R2409	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2410	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2411	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2412	RC/+6123JT+++	CARBON T 12K OHM J 1/6W
R2413	RC/+6752JT+++	CARBON T 7.5K OHM J 1/6W
R2414	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
or	RC/+6221JT+++	CARBON T 220 OHM J 1/6W
R2415	RC/+6181JT+++	CARBON T 180 OHM J 1/6W
R2417	RC/+6273JT+++	CARBON T 27K OHM J 1/6W
R2418	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R2419	RC/+6181JT+++	CARBON T 180 OHM J 1/6W
R2420	RM/+4222GPKE+	METAL P 2.2KOHM G 1/4WKE
R2421	RM/+4222GPKE+	METAL P 2.2KOHM G 1/4WKE
R2422	RM/+4123GPKE+	METAL P 12K OHM G 1/4WKE
R2423	RM/+4123GPKE+	METAL P 12K OHM G 1/4WKE
R2424	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R2425	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2426	RC/+6821JT+++	CARBON T 820 OHM J 1/6W
R2430	RC/+6224JT+++	CARBON T 220K OHM J 1/6W
R2433	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2434	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2435	RC/+6683JT+++	CARBON T 68K OHM J 1/6W
R2436	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2437	RC/+6391JT+++	CARBON T 390 OHM J 1/6W
R2438	RC/+6271JT+++	CARBON T 270 OHM J 1/6W
R2439	RC/+6271JT+++	CARBON T 270 OHM J 1/6W
R2440	RC/+6683JT+++	CARBON T 68K OHM J 1/6W
R2441	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2442	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2500	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2501	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2502	RC/+6163JT+++	CARBON T 16K OHM J 1/6W
R2505	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R2506	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2507	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R2508	RC/+6752JT+++	CARBON T 7.5K OHM J 1/6W
R2509	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2510	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2511	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2512	RC/+6123JT+++	CARBON T 12K OHM J 1/6W
R2513	RC/+6752JT+++	CARBON T 7.5K OHM J 1/6W
R2514	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
or	RC/+6221JT+++	CARBON T 220 OHM J 1/6W
R2517	RC/+6273JT+++	CARBON T 27K OHM J 1/6W
R2518	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R2519	RC/+6181JT+++	CARBON T 180 OHM J 1/6W
R2520	RM/+4222GPKE+	METAL P 2.2KOHM G 1/4WKE
R2521	RM/+4222GPKE+	METAL P 2.2KOHM G 1/4WKE
R2522	RM/+4123GPKE+	METAL P 12K OHM G 1/4WKE
R2523	RM/+4123GPKE+	METAL P 12K OHM G 1/4WKE
R2524	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R2525	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2526	RC/+6821JT+++	CARBON T 820 OHM J 1/6W
R2530	RC/+6224JT+++	CARBON T 220K OHM J 1/6W
R2533	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2534	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2535	RC/+6683JT+++	CARBON T 68K OHM J 1/6W
R2536	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2537	RC/+6391JT+++	CARBON T 390 OHM J 1/6W
R2538	RC/+6271JT+++	CARBON T 270 OHM J 1/6W
R2539	RC/+6271JT+++	CARBON T 270 OHM J 1/6W
R2540	RC/+6683JT+++	CARBON T 68K OHM J 1/6W
R2541	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R2542	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2600	RC/+6683JT+++	CARBON T 68K OHM J 1/6W

Schematic Location	Parts No.	Description
R2601	RC/+6224JT+++	CARBON T 220K OHM J 1/6W
R2603	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R2604	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R2605	RC/+6272JT+++	CARBON T 2.7K OHM J 1/6W
R2606	RC/+6122JT+++	CARBON T 1.2K OHM J 1/6W
R2607	RC/+6823JT+++	CARBON T 82K OHM J 1/6W
R2608	RC/+6224JT+++	CARBON T 220K OHM J 1/6W
R2610	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R2611	RC/+6182JT+++	CARBON T 1.8K OHM J 1/6W
R2612	RC/+6272JT+++	CARBON T 2.7K OHM J 1/6W
R2613	RC/+6122JT+++	CARBON T 1.2K OHM J 1/6W
R2619	RC/+6471JT+++	CARBON T 470 OHM J 1/6W
R2620	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2621	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2622	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2623	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2624	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2625	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2626	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2627	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2628	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R2629	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R2630	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2631	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2632	RC/+6221JT+++	CARBON T 220 OHM J 1/6W
R2633	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R2634	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R2635	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2636	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R2637	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2638	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R2639	RC/+6470JT+++	CARBON T 47 OHM J 1/6W
R2640	RC/+6823JT+++	CARBON T 82K OHM J 1/6W
R2641	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2642	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2643	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R2645	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R2647	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2648	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R2649	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2650	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R2651	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R2652	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2653	RC/+6105JT+++	CARBON T 1M OHM J 1/6W
R2654	RC/+6392JT+++	CARBON T 3.9K OHM J 1/6W
R2656	RC/+6683JT+++	CARBON T 68K OHM J 1/6W
R2657	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R2659	RC/+6123JT+++	CARBON T 12K OHM J 1/6W
R2661	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R2662	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R2663	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R2664	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R2665	RC/+6393JT+++	CARBON T 39K OHM J 1/6W
R2670	RC/+6223JP+++	CARBON P 22K OHM J 1/6W

AD-2 P.C.B.(AUDIO CIRCUIT)
ASSY.NO.143-0-230V-34950

Schematic Location	Parts No.	Description
		(MISCELLANEOUS)
	143 2 374T 05600	BRACKET, CHANNEL LED
	143 2 374T 07000	BRACKET
	143 2 386T 00800	BRACKET
A7001	4 985V 01201	FLUORESCENT DISPLAY
X7001	4 953V 06100	FILTER
		(SWITCHES)
S2701	4 231V 24900	SLIDE SWITCH

Schematic Location	Parts No.	Description
S2702	4 231V 25400	SLIDE SWITCH
S6301	4 231V 70500	PUSH SWITCH
S6302	4 231V 70500	PUSH SWITCH
S6303	4 231V 70500	PUSH SWITCH
S6304	4 231V 70500	PUSH SWITCH
S6305	4 231V 70500	PUSH SWITCH
S6306	4 231V 70500	PUSH SWITCH
S6307	4 231V 70500	PUSH SWITCH
S6308	4 231V 70500	PUSH SWITCH
S6309	4 231V 70500	PUSH SWITCH
S6310	4 231V 70500	PUSH SWITCH
S6311	4 231V 70500	PUSH SWITCH
S6312	4 231V 70500	PUSH SWITCH
S7001	4 231V 69100	PUSH SWITCH
S7002	4 231V 69100	PUSH SWITCH
S7003	4 231V 69100	PUSH SWITCH
S7004	4 231V 68100	PUSH SWITCH
S7005	4 231V 68100	PUSH SWITCH
S7006	4 231V 68100	PUSH SWITCH
S7007	4 231V 68100	PUSH SWITCH
S7008	4 231V 68100	PUSH SWITCH
S7009	4 231V 68100	PUSH SWITCH
S7010	4 231V 68100	PUSH SWITCH
S7011	4 231V 68100	PUSH SWITCH
S7012	4 231V 68100	PUSH SWITCH
S7013	4 231V 69100	PUSH SWITCH
S7014	4 231V 22200	SLIDE SWITCH
S7015	4 231V 22200	SLIDE SWITCH
S7016	4 231V 24000	SLIDE SWITCH
		(VARIABLE RESISTORS)
VR2701	4 222V 90000	
VR2702	4 222V 65613	SEMI VR
VR2703	4 222V 65613	SEMI VR
VR7001	4 222V 24400	VR
		(INTEGRATED CIRCUITS)
IC7001	SI4633BN9503+	IC TCP4633BN9503
IC7002	SILC4027B++++	IC LC4027B
or	SITC4027BP+++	IC TC4027BP
		(TRANSISTORS)
Q7001	STA937+Q+++++	TR 2SA937 Q
or	STA937+R+++++	TR 2SA937 R
Q7002	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
Q7003	STC2021Q+++++	TR 2SC2021 Q
or	STC2021R+++++	TR 2SC2021 R
		(DIODES)
D2701	4 986V 00800	LED DISPLAY
D6301	SL1RCPSLC++RE	LED LN81RCPSL
D6302	SL1RCPSLC++RE	LED LN81RCPSL
D6303	SL1RCPSLC++RE	LED LN81RCPSL
D6304	SL1RCPSLC++RE	LED LN81RCPSL
D6305	SL1RCPSLC++RE	LED LN81RCPSL
D6306	SL1RCPSLC++RE	LED LN81RCPSL
D6307	SL1RCPSLC++RE	LED LN81RCPSL
D6308	SL1RCPSLC++RE	LED LN81RCPSL
D6309	SL1RCPSLC++RE	LED LN81RCPSL
D6310	SL1RCPSLC++RE	LED LN81RCPSL
D6311	SL1RCPSLC++RE	LED LN81RCPSL
D6312	SL1RCPSLC++RE	LED LN81RCPSL
D6313	SD1SS133++++T	DIODE 1SS133
D6314	SD1SS133++++T	DIODE 1SS133
D6315	SD1SS133++++T	DIODE 1SS133
D6316	SD1SS133++++T	DIODE 1SS133
D6317	SD1SS133++++T	DIODE 1SS133
D6318	SD1SS133++++T	DIODE 1SS133
D6319	SD1SS133++++T	DIODE 1SS133
D6320	SD1SS133++++T	DIODE 1SS133
D6321	SD1SS133++++T	DIODE 1SS133

Schematic Location	Parts No.	Description
D6322	SD1SS133++++T	DIODE 1SS133
D6323	SD1SS133++++T	DIODE 1SS133
D6324	SD1SS133++++T	DIODE 1SS133
D6325	SD1SS133++++T	DIODE 1SS133
D6326	SD1SS133++++T	DIODE 1SS133
D6327	SD1SS133++++T	DIODE 1SS133
D6328	SD1SS133++++T	DIODE 1SS133
D6329	SD1SS133++++T	DIODE 1SS133
D6330	SD1SS133++++T	DIODE 1SS133
D6331	SD1SS133++++T	DIODE 1SS133
D6332	SD1SS133++++T	DIODE 1SS133
D6333	SD1SS133++++T	DIODE 1SS133
D6334	SD1SS133++++T	DIODE 1SS133
D6335	SD1SS133++++T	DIODE 1SS133
D6336	SD1SS133++++T	DIODE 1SS133
D7001	SD1SS133++++T	DIODE 1SS133
D7002	SD1SS133++++T	DIODE 1SS133
D7003	SD1SS133++++T	DIODE 1SS133
D7004	SD1SS133++++T	DIODE 1SS133
D7005	SD1SS133++++T	DIODE 1SS133
D7006	SD1SS133++++T	DIODE 1SS133
D7007	SDGZA047Z++++	ZENER DIODE GZA4.7Z
D7008	SD1SS133++++T	DIODE 1SS133
D7009	SD1SS133++++T	DIODE 1SS133
D7010	SDGZA047Z++++	ZENER DIODE GZA4.7Z
D7011	SD1SS133++++T	DIODE 1SS133
D7012	SD1SS133++++T	DIODE 1SS133
D7013	SD1SS133++++T	DIODE 1SS133
D7014	SD1SS133++++T	DIODE 1SS133
D7015	SD1SS133++++T	DIODE 1SS133
D7016	SD1SS133++++T	DIODE 1SS133
D7017	SD1SS133++++T	DIODE 1SS133
D7018	SD1SS133++++T	DIODE 1SS133
D7019	SD1SS133++++T	DIODE 1SS133
D7020	SD1SS133++++T	DIODE 1SS133
D7021	SD1SS133++++T	DIODE 1SS133
D7022	SD1SS133++++T	DIODE 1SS133
D7026	SD1SS133++++T	DIODE 1SS133
D7027	SD1SS133++++T	DIODE 1SS133
		(COMPOSITE)
B7001	SRC144F++++++	TR MD DTC144F
B7002	SRA124F++++++	TR MD DTA124F
		(CAPACITORS)
C2701	CE+25475MVAKS	ELECT 4.7MF 25V M V AK
C2702	CE+25475MVAKS	ELECT 4.7MF 25V M V AK
C2703	CC+50821KDYBS	CERAMIC 820PF 50V K D YB
C2704	CC+50821KDYBS	CERAMIC 820PF 50V K D YB
C2705	CE+25475MVAKS	ELECT 4.7MF 25V M V AK
C7001	CC+50101KDYBS	CERAMIC 100PF 50V K D YB
C7002	CC+50101KDYBS	CERAMIC 100PF 50V K D YB
C7003	CE+16106MVAKS	ELECT 10MF 16V M V AK
C7004	CE+50106MVAKS	ELECT 10MF 50V M V AK
C7005	CC+50223ZDYFS	CERAMIC 0.022MF 50V Z D YF
C7006	CM+50823JG++S	MYLAR 0.082MF 50V J G
C7007	CE+10226MVAKS	ELECT 22MF 10V M V AK
C7008	CB+25104MDXRS	BC CON 0.1MF 25V M D XR
C7009	CE+25226MVAKS	ELECT 22MF 25V M V AK
C7010	CC+50103ZDYFS	CERAMIC 0.01MF 50V Z D YF
		(RESISTORS)
R2701	RC⁄+6223JT+++	CARBON T 22K OHM J 1/6W
R2702	RC⁄+6223JT+++	CARBON T 22K OHM J 1/6W
R7001	RC⁄+6103JT+++	CARBON T 10K OHM J 1/6W
R7002	RC⁄+6103JT+++	CARBON T 10K OHM J 1/6W
R7003	RC⁄+6103JT+++	CARBON T 10K OHM J 1/6W
R7004	RC⁄+6102JT+++	CARBON T 1K OHM J 1/6W
R7005	RC⁄+6103JT+++	CARBON T 10K OHM J 1/6W
R7006	RC⁄+6103JT+++	CARBON T 10K OHM J 1/6W
R7007	RC⁄+6103JT+++	CARBON T 10K OHM J 1/6W
R7008	RC⁄+6103JT+++	CARBON T 10K OHM J 1/6W
R7009	RC⁄+6103JT+++	CARBON T 10K OHM J 1/6W

Schematic Location	Parts No.	Description
R7010	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7011	RC/+6105JT+++	CARBON T 1M OHM J 1/6W
R7012	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7013	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7014	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7015	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7016	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7017	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7018	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R7019	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R7020	RC/+6471JT+++	CARBON T 470 OHM J 1/6W
R7021	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R7022	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7023	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R7024	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R7027	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R7028	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R7029	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R7030	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R7031	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R7032	RC/+6822JT+++	CARBON T 8.2K OHM J 1/6W
R7033	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R7034	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7035	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R7036	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7037	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R7038	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R7040	RC/+6162JT+++	CARBON T 1.6K OHM J 1/6W

SY-1 P.C.B.(SYSTEM CONTROL CIRCUIT)
ASSY.NO.143-0-230V-35150

Schematic Location	Parts No.	Description
		(MISCELLANEOUS)
	143 2 368T 08300	HEAT SINK
X3001	4 953V 03400	FILTER
X3002	4 953V 08200	FILTER
		(VARIABLE RESISTORS)
SVR4001	4 222V 65114	200K OHM
SVR4002	4 222V 65114	200K OHM
SVR4003	4 222V 65109	20K OHM
SVR4005	4 222V 65114	200K OHM
SVR4006	4 222V 65118	1M OHM
SVR4007	4 222V 63700	200K OHM
SVR4008	4 222V 65217	200K OHM
SVR4009	4 222V 63700	200K OHM
		(INTEGRATED CIRCUITS)
IC3001	SILM6402A220+	IC LM6402A220
IC3002	SILM6402A221+	IC LM6402A221
IC3003	SIM50763610SP	IC M50763610SP
IC3004	SILA7011+++++	IC LA7011
IC3005	SILA2400+++++	IC LA2400
IC3007	SIM54543L++++	IC M54543L
IC3008	SIM54543L++++	IC M54543L
IC3009	SIBA6209U++++	IC BA6209U
IC3010	SITC4069UBP++	IC TC4069UBP
or	SIUPD4069UBC+	IC UPD4069UBC
IC3011	SILC4001B++++	IC LC4001B
or	SITC4001BP+++	IC TC4001BP
or	SIUPD4001BC++	IC UPD4001BC
IC3012	SITC4069UBP++	IC TC4069UBP
or	SIUPD4069UBC+	IC UPD4069UBC
IC3014	SILC4001B++++	IC LC4001B
or	SITC4001BP+++	IC TC4001BP
or	SIUPD4001BC++	IC UPD4001BC

Schematic Location	Parts No.	Description
IC4001	SIBA858B+++++	IC BA858B
IC4002	SILC7401+++++	IC LC7401
IC4003	SIBA6301+++++	IC BA6301
IC4004	SIBA6321+++++	IC BA6321
IC4005	SIM58478P++++	IC M58478P
		(TRANSISTORS)
Q3001	STD471+KA++++	TR 2SD471 KA
or	STD471+LA++++	TR 2SD471 LA
Q3002	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q3003	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q3004	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q3005	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q3006	STB808+F+++++	TR 2SB808 F
or	STB808+G+++++	TR 2SB808 G
Q3007	STA608+E+++++	TR 2SA608 E
or	STA608+F+++++	TR 2SA608 F
Q3008	STD313+E+++++	TR 2SD313 E
or	STD313+F+++++	TR 2SD313 F
or	STD325+E+++++	TR 2SD325 E
or	STD325+F+++++	TR 2SD325 F
Q3009	STA608+E+++++	TR 2SA608 E
or	STA608+F+++++	TR 2SA608 F
Q3010	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q4001	STC1815GR++++	TR 2SC1815 GR
or	STC2603F+++++	TR 2SC2603 F
or	STC536+F+++++	TR 2SC536 F
Q4002	STC1815GR++++	TR 2SC1815 GR
or	STC2603F+++++	TR 2SC2603 F
or	STC536+F+++++	TR 2SC536 F
Q4003	STC1815GR++++	TR 2SC1815 GR
or	STC2603F+++++	TR 2SC2603 F
or	STC536+F+++++	TR 2SC536 F
Q4004	STC1815GR++++	TR 2SC1815 GR
or	STC2603F+++++	TR 2SC2603 F
or	STC536+F+++++	TR 2SC536 F
Q4005	STA933+Q+++++	TR 2SA933 Q
or	STA933+R+++++	TR 2SA933 R
Q4006	STC1815GR++++	TR 2SC1815 GR
or	STC2603F+++++	TR 2SC2603 F
or	STC536+F+++++	TR 2SC536 F
Q4007	STA933+Q+++++	TR 2SA933 Q
or	STA933+R+++++	TR 2SA933 R
Q4008	STC1815GR++++	TR 2SC1815 GR
or	STC2603F+++++	TR 2SC2603 F
or	STC536+F+++++	TR 2SC536 F
Q4009	STA933+Q+++++	TR 2SA933 Q
or	STA933+R+++++	TR 2SA933 R
Q4010	STA933+R+++++	TR 2SA933 R
Q4011	STC1815GR++++	TR 2SC1815 GR
or	STC2603F+++++	TR 2SC2603 F
or	STC536+F+++++	TR 2SC536 F
Q4012	STC536+F+++++	TR 2SC536 F
Q4013	STC1815GR++++	TR 2SC1815 GR
or	STC2603F+++++	TR 2SC2603 F
or	STC536+F+++++	TR 2SC536 F
		(DIODES)
D3001	SDGZA056Y++++	ZENER DIODE GZA5.6Y
D3002	SDGZA051X++++	ZENER DIODE GZA5.1X
D3003	SDGZA075Y++++	ZENER DIODE GZA7.5Y
D3004	SDGZA051X++++	ZENER DIODE GZA5.1X
D3005	SDGZA043Z++++	ZENER DIODE GZA4.3Z
D3008	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
D3009	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3011	SDGMA01+++++T	DIODE GMA01

Schematic Location	Parts No.	Description
D3011	SD1SS133++++T	DIODE 1SS133 T
D3012	SDGMA01++++++	DIODE GMA01
or	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
or	SD1SS133+++++	DIODE 1SS133
D3013	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3015	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3016	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3017	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3018	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3019	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3020	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3021	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3022	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3023	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3024	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3025	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3026	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
D3027	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3028	SDDS442++++++	DIODE DS442
or	SDDS442+++++T	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
or	SD1S2473++++T	DIODE 1S2473
D3029	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3030	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3031	SDDS442+++++T	DIODE DS442
or	SD1S2473++++T	DIODE 1S2473
D3033	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3034	SDGMA01++++++	DIODE GMA01
or	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
or	SD1SS133+++++	DIODE 1SS133
D3036	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3037	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3038	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3041	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3042	SDDS442+++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3043	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
D3044	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
D3045	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
D3046	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3047	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
D3048	SDDS442+++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3050	SDDS442++++++	DIODE DS442

Schematic Location	Parts No.	Description
D3050	SD1S2473+++++	DIODE 1S2473
D3051	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3052	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3053	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3054	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3055	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3056	SDDS442+++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3057	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3058	SDDS442++++++	DIODE DS442
or	SD1S2473+++++	DIODE 1S2473
D3061	SDGMA01++++++	DIODE GMA01
or	SD1SS133+++++	DIODE 1SS133
D3062	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D3063	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4003	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4004	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4005	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4006	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4007	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4008	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4009	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4010	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4011	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4012	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4013	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4014	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4015	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4016	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4017	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4018	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4019	SDGZA068X+++T	ZENER DIODE GZA6.8X
D4020	SDDS442+++++T	DIODE DS442
or	SD1S2473++++T	DIODE 1S2473
D4021	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4022	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4023	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4024	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4025	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
D4026	SDGMA01+++++T	DIODE GMA01
or	SD1SS133++++T	DIODE 1SS133 T
		(COMPOSITE)
B3001	4 956V 10363	RESISTOR PACK

Schematic Location	Parts No.	Description
B3001	4 957V 10313	RESISTOR PACK
B3002	4 956V 10357	RESISTOR PACK
or	4 957V 10307	RESISTOR PACK
B3003	4 956V 10362	RESISTOR PACK
or	4 957V 10312	RESISTOR PACK
B3004	4 956V 10355	RESISTOR PACK
or	4 957V 10305	RESISTOR PACK
B3005	4 956V 10354	RESISTOR PACK
or	4 957V 10304	RESISTOR PACK
B3006	4 956V 10360	RESISTOR PACK
or	4 957V 10310	RESISTOR PACK
B3007	4 956V 10363	RESISTOR PACK
or	4 957V 10313	RESISTOR PACK
B3013	STC3400++++++	TR 2SC3400
B3015	SRC144ES+++++	TR MD DTC144ES
or	SRC144F++++++	TR MD DTC144F
or	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
B3016	STC3402++++++	TR 2SC3402
B3017	SRC144ES+++++	TR MD DTC144ES
or	SRC144F++++++	TR MD DTC144F
or	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
B3018	SRC144ES+++++	TR MD DTC144ES
or	SRC144F++++++	TR MD DTC144F
or	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
B3019	SRC144ES+++++	TR MD DTC144ES
or	SRC144F++++++	TR MD DTC144F
or	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
B3020	STC3400++++++	TR 2SC3400
B3021	STA1346++++++	TR 2SA1346
B3022	SRC144ES+++++	TR MD DTC144ES
or	SRC144F++++++	TR MD DTC144F
or	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
B3023	SRC144ES+++++	TR MD DTC144ES
or	SRC144F++++++	TR MD DTC144F
or	SRC144N++++++	TR MD DTC144N
or	STC3399++++++	TR 2SC3399
B3024	STC3400++++++	TR 2SC3400
B3025	STC3401++++++	TR 2SC3401
B3026	STA1345++++++	TR 2SA1345
B3027	STC3402++++++	TR 2SC3402
B3041	4 202V 13400	DIODE
B3042	4 202V 13400	DIODE
B3043	4 202V 13300	DIODE
B3044	4 202V 13300	DIODE
B3045	4 202V 13300	DIODE
B3047	4 202V 13400	DIODE
B3048	4 202V 13300	DIODE
B3049	4 202V 13300	DIODE
B3050	4 202V 13300	DIODE
B3101	STC3399++++++	TR 2SC3399
B3102	STC3399++++++	TR 2SC3399
B3103	STC3399++++++	TR 2SC3399
B3104	STC3399++++++	TR 2SC3399
B3105	STC3399++++++	TR 2SC3399
B3106	STC3399++++++	TR 2SC3399
B4001	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399
B4002	SRA1345++++++	TR MD 2SA1345
B4003	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399
B4004	SRA1345++++++	TR MD 2SA1345
B4005	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399
B4006	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399
B4007	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399

Schematic Location	Parts No.	Description
B4008	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399
B4009	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399
B4010	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399
B4011	SRC144F++++++	TR MD DTC144F
or	SRC3399++++++	TR MD 2SC3399
		(CAPACITORS)
C3001	CE+16226MVHAS	ELECT 22MF 16V M V HA
C3002	CB+25104KDXRS	BC CON 0.1MF 25V K D XR
C3003	CE+50105MVHAS	ELECT 1MF 50V M V HA
C3004	CB+25104KDXRS	BC CON 0.1MF 25V K D XR
C3005	CB+25104KDXRS	BC CON 0.1MF 25V K D XR
C3006	CB+25104KDXRS	BC CON 0.1MF 25V K D XR
C3007	CE+50335MVHAS	ELECT 3.3MF 50V M V HA
C3008	CC+50103KDYBS	CERAMIC 0.01MF 50V K D YB
C3009	CE+16226MVHAS	ELECT 22MF 16V M V HA
C3010	CB+25104KDXRS	BC CON 0.1MF 25V K D XR
C3011	CE+25475MVHAS	ELECT 4.7MF 25V M V HA
C3012	CC+50101KDYBS	CERAMIC 100PF 50V K D YB
C3013	CC+50101KDYBS	CERAMIC 100PF 50V K D YB
C3014	CE+50225MVHAS	ELECT 2.2MF 50V M V HA
C3015	CE+50225MVHAS	ELECT 2.2MF 50V M V HA
C3016	CE+50225MVHAS	ELECT 2.2MF 50V M V HA
C3018	CE+16106MVHAS	ELECT 10MF 16V M V HA
C3019	CC+50221KAYBS	CERAMIC 220PF 50V K A YB
C3020	CC+50221KAYBS	CERAMIC 220PF 50V K A YB
C3021	CB+25104KDXRS	BC CON 0.1MF 25V K D XR
C3022	CB+25104KDXRS	BC CON 0.1MF 25V K D XR
C3024	CW+25475MVNPS	NONPOLAR 4.7MF 25V M V NP
C3025	CE+50105MVHAS	ELECT 1MF 50V M V HA
C3026	CE+16226MVHAS	ELECT 22MF 16V M V HA
C3027	CE+16336MVHAS	ELECT 33MF 16V M V HA
C3028	CW+25106MVNPS	NONPOLAR 10MF 25V M V NP
C3029	CC+50471KDYBS	CERAMIC 470PF 50V K D YB
C3030	CB+25103KAXRS	BC CON 0.01MF 25V K A XR
C3032	CE+50105MVHAS	ELECT 1MF 50V M V HA
C4001	CB+25683KDXRS	BC CON 0.068MF 25V K D XR
C4002	CE+50225MVHAS	ELECT 2.2MF 50V M V HA
C4003	CE+50105MRHAL	ELECT 1MF 50V M R HA
C4004	CM+50103JR++L	MYLAR 0.01MF 50V J R
C4005	CM+50103JR++L	MYLAR 0.01MF 50V J R
C4006	CM+50123JR++L	MYLAR 0.012MF 50V J R
C4007	CM+50473KR++L	MYLAR 0.047MF 50V K R
C4008	CM+50102JR++L	MYLAR 0.001MF 50V J R
C4009	CM+50102JR++L	MYLAR 0.001MF 50V J R
C4010	CB+25102MDXRS	BC CON 0.001MF 25V M D XR
C4011	CM+50562KM++S	MYLAR 0.0056MF 50V K M
C4012	CM+50103KM++S	MYLAR 0.01MF 50V K M
C4013	CE+50105MVHAS	ELECT 1MF 50V M V HA
C4014	CM+50683JM++S	MYLAR 0.068MF 50V J M
C4016	CC+50201KDYBS	CERAMIC 200PF 50V K D YB
C4017	CC+50221KDYBS	CERAMIC 220PF 50V K D YB
C4018	CM+50333KR++L	MYLAR 0.033MF 50V K R
C4019	CB+25104MDXRS	BC CON 0.1MF 25V M D XR
C4020	CE+16226MRHAL	ELECT 22MF 16V M R HA
C4021	CB+25222MDXRS	BC CON 0.0022MF 25V M D XR
C4022	CB+25222MDXRS	BC CON 0.0022MF 25V M D XR
C4023	CM+50104JG++S	MYLAR 0.1MF 50V J G
C4024	CE+16106MRHAL	ELECT 10MF 16V M R HA
C4025	CB+25223MDXRS	BC CON 0.022MF 25V M D XR
C4026	CE6R3227MRHAL	ELECT 220MF 6.3V M R HA
C4027	CB+25222KDXRS	BC CON 0.0022MF 25V K D XR
C4028	CB+25683KDXRS	BC CON 0.068MF 25V K D XR
C4029	CM+50154JG++S	MYLAR 0.15MF 50V J G
C4030	CM+50104JG++S	MYLAR 0.1MF 50V J G
C4031	CM+50184JG++S	MYLAR 0.18MF 50V J G
C4032	CM+50152KM++S	MYLAR 0.0015MF 50V K M
C4033	CM+50473KR++L	MYLAR 0.047MF 50V K R
C4034	CM+50683JM++S	MYLAR 0.068MF 50V J M
C4035	CB+12104MDBCS	BC CON 0.1MF 12V M D BC

Schematic Location	Parts No.	Description
C4036	CE+16226MRHAL	ELECT 22MF 16V M R HA
C4037	CW+50105MRNPL	NONPOLAR 1MF 50V M R NP
C4038	CE+50335MRHAL	ELECT 3.3MF 50V M R HA
C4039	CE+16226MRHAL	ELECT 22MF 16V M R HA
C4040	CB+12104MDBCS	BC CON 0.1MF 12V M D BC
C4041	CE+50335MVLRS	ELECT 3.3MF 50V M V LR
C4042	CE+50105MRLRL	ELECT 1MF 50V M R LR
C4043	CM+50473JR++L	MYLAR 0.047MF 50V J R
C4044	CN100683JM++S	P P CON 0.068MF 100V J M
C4045	CB+25103KRXRL	BC CON 0.01MF 25V K R XR
C4046	CE+25475MRHAL	ELECT 4.7MF 25V M R HA
C4047	CE+50335MRHAL	ELECT 3.3MF 50V M R HA
C4048	CB+25223KDXRS	BC CON 0.022MF 25V K D XR
C4049	CE+16106MRHAL	ELECT 10MF 16V M R HA
C4050	CW+50225MVNPS	NONPOLAR 2.2MF 50V M V NP
C4051	CM+50103JR++L	MYLAR 0.01MF 50V J R
C4052	CN100223JM++S	P P CON 0.022MF 100V J M
C4053	CB+12104MDBCS	BC CON 0.1MF 12V M D BC
C4054	CE+16106MRHAL	ELECT 10MF 16V M R HA
C4055	CC+50201KDYBS	CERAMIC 200PF 50V K D YB
C4056	CB+25102KDXRS	BC CON 0.001MF 25V K D XR
C4058	CC+50201KDYBS	CERAMIC 200PF 50V K D YB
C4059	CC+50331KDYBS	CERAMIC 330PF 50V K D YB
C4060	CW+50105MVNPS	NONPOLAR 1MF 50V M V NP
C4061	CA+25224MV++S	AL ELECT 0.22MF 25V M V
C4062	CM+50473JR++L	MYLAR 0.047MF 50V J R
C4063	CB+25223KDXRS	BC CON 0.022MF 25V K D XR
C4064	CB+25472KDXRS	BC CON 0.0047MF 25V K D XR
		(RESISTORS)
R3002	RC/+6471JT+++	CARBON T 470 OHM J 1/6W
R3003	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R3004	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R3005	RC/+6274JT+++	CARBON T 270K OHM J 1/6W
R3006	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3007	RC/+6183JT+++	CARBON T 18K OHM J 1/6W
R3008	RC/+6184JT+++	CARBON T 180K OHM J 1/6W
R3009	RC/+6224JT+++	CARBON T 220K OHM J 1/6W
R3010	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R3011	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3012	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3013	RC/+6154JT+++	CARBON T 150K OHM J 1/6W
R3015	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R3016	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R3017	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3018	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3020	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3021	RC/+6105JT+++	CARBON T 1M OHM J 1/6W
R3023	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R3024	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3025	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3026	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3027	RC/+6564JT+++	CARBON T 560K OHM J 1/6W
R3029	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25
or	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3031	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R3032	RC/+6222JP+++	CARBON P 2.2K OHM J 1/6W
R3033	RC/+6183JT+++	CARBON T 18K OHM J 1/6W
R3036	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R3037	RC/+6105JT+++	CARBON T 1M OHM J 1/6W
R3038	RC/+6102JP+++	CABON P 1K OHM J 1/6W
R3039	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R3040	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3041	RC/+6104JP+++	CARBON P 100K OHM J 1/6W
or	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R3042	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R3043	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3044	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3045	RC/+4223JP++R	CARBON P 22K OHM J1/4WR25
R3046	RC/+6103JP+++	CARBON P 10K OHM J 1/6W
R3047	RM++13R3JF+++	METAL F 3.3 OHM J 1W
R3048	RC/+4123JT++R	CARBON T 12K OHM J1/4WR25

Schematic Location	Parts No.	Description
R3049	RC/+4123JT++R	CARBON T 12K OHM J1/4WR25
R3050	RM++15R6JF+++	METAL F 5.6 OHM J 1W
R3051	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3052	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3053	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R3054	RC/+6104JP+++	CARBON P 100K OHM J 1/6W
R3055	RM++13R3JF+++	METAL F 3.3 OHM J 1W
R3056	RC/+6561JT+++	CARBON T 560 OHM J 1/6W
R3057	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3058	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3059	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R3060	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3061	RF/+42R2JFFPR	FP-CARBON F 2.2 J 1/4W
R3062	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R3063	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R3064	RC/+4471JV+++	CARBON V 470 OHM J 1/4W
R3065	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3066	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3067	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3068	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3069	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3070	RC/+4681JP++R	CARBON P 680 OHM J1/4WR25
R3071	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3072	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3073	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3074	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3075	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3076	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3077	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3078	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3079	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3080	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3081	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R3082	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R3083	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R3084	RC/+6103JP+++	CARBON P 10K OHM J 1/6W
R3085	RC/+4102JP++R	CARBON P 1K OHM J1/4WR25
R3086	RC/+4102JP++R	CARBON P 1K OHM J1/4WR25
R3087	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3089	RC/+4102JP++R	CARBON P 1K OHM J1/4WR25
R3090	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3092	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R3093	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3095	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3097	RC/+6102JP+++	CABON P 1K OHM J 1/6W
R3100	RC/+6683JP+++	CARBON P 68K OHM J 1/6W
R3101	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R3102	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R3106	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R3107	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3110	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3111	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3112	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R3113	RC/+6823JT+++	CARBON T 82K OHM J 1/6W
R3114	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R3120	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3122	RC/+4101JP++R	CARBON P 100 OHM J1/4WR25
or	RC/+4101JP++R	CARBON P 100 OHM J1/4WR25
R3123	RC/+4102JP++R	CARBON P 1K OHM J1/4WR25
R3124	RC/+6102JP+++	CABON P 1K OHM J 1/6W
R3125	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3130	RM/+22R2JPRF+	METAL P 2.2 OHM J 1/2WRF
R3132	RC/+6103JP+++	CARBON P 10K OHM J 1/6W
R3133	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R3134	RC/+6102JP+++	CABON P 1K OHM J 1/6W
R3136	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3140	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R3142	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3143	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R3145	RC/+6103JP+++	CARBON P 10K OHM J 1/6W
R3146	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R3147	RC/+6103JP+++	CARBON P 10K OHM J 1/6W
R3148	RC/+6683JT+++	CARBON T 68K OHM J 1/6W

Schematic Location	Parts No.	Description
R3149	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R3150	RC/+6124JT+++	CARBON T 120K OHM J 1/6W
R3152	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4001	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R4002	RC/+6333JP+++	CARBON P 33K OHM J 1/6W
R4003	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R4004	RC/+6433JT+++	CARBON T 43K OHM J 1/6W
R4005	RC/+6681JT+++	CARBON T 680 OHM J 1/6W
R4006	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R4007	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R4008	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R4009	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R4010	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4011	RC/+6823JT+++	CARBON T 82K OHM J 1/6W
R4012	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4013	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R4014	RC/+4473JT++R	CARBON T 47K OHM J1/4WR25
R4015	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R4016	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R4017	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R4018	RC/+4244JP++R	CARBON P 240KOHM J1/4WR25
R4020	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R4021	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4022	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R4023	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R4024	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4025	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4026	RC/+4102JT++R	CARBON T 1K OHM J1/4WR25
R4027	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4028	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4029	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R4030	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4031	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4032	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4033	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4034	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4035	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4036	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4037	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4038	RC/+4101JP++R	CARBON P 100 OHM J1/4WR25
R4039	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R4040	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4041	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4042	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R4043	RC/+6274JT+++	CARBON T 270K OHM J 1/6W
R4044	RC/+6112JT+++	CARBON T 1.1K OHM J 1/6W
R4045	RC/+6332JT+++	CARBON T 3.3K OHM J 1/6W
R4046	RC/+6750JT+++	CARBON T 75 OHM J 1/6W
R4047	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4048	RC/+6221JT+++	CARBON T 220 OHM J 1/6W
R4049	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R4050	RC/+6134JT+++	CARBON T 130K OHM J 1/6W
R4051	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R4052	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R4053	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R4054	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R4055	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4056	RC/+6823JT+++	CARBON T 82K OHM J 1/6W
R4057	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4058	RC/+6754JT+++	CARBON T 750K OHM J 1/6W
R4059	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4060	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4061	RC/+6184JT+++	CARBON T 180K OHM J 1/6W
R4062	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4063	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R4064	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4065	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R4066	RC/+4104JT++R	CARBON T 100KOHM J1/4WR25
R4067	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4068	RC/+6184JT+++	CARBON T 180K OHM J 1/6W
R4069	RC/+6472JT+++	CARBON T 4.7K OHM J 1/6W
R4070	RC/+6333JT+++	CARBON T 33K OHM J 1/6W

Schematic Location	Parts No.	Description
R4071	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4072	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4073	RC/+4335JT++R	CARBON T 3.3MOHM J1/4WR25
R4074	RC/+6124JT+++	CARBON T 120K OHM J 1/6W
R4075	RC/+6334JT+++	CARBON T 330K OHM J 1/6W
R4076	RM/+4564FPKE+	METAL P 560K OHM F1/4WKE
R4077	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R4078	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4079	RC/+6682JT+++	CARBON T 6.8K OHM J 1/6W
R4080	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R4081	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R4082	RC/+4103JT++R	CARBON T 10K OHM J1/4WR25
R4083	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4084	RM/+4225FPKE+	METAL P 2.2M OHM F1/4WKE
R4085	RC/+4683JT++R	CARBON T 68K OHM J1/4WR25
R4086	RM/+4104FPKE+	METAL P 100K OHM F1/4WKE
R4087	RC/+6754JT+++	CARBON T 750K OHM J 1/6W
R4088	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R4089	RM/+4514FPKE+	METAL P 510K OHM F1/4WKE
R4090	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R4091	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4092	RM/+4304FPKE+	METAL P 300K OHM F1/4WKE
R4093	RC/+4101JP++R	CARBON P 100 OHM J1/4WR25
R4094	RC/+6151JT+++	CARBON T 150 OHM J 1/6W
R4095	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4096	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4097	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R4098	RC/+6824JT+++	CARBON T 820K OHM J 1/6W
R4099	RC/+6473JT+++	CARBON T 47K OHM J 1/6W
R4100	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R4101	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4102	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4104	RC/+6105JT+++	CARBON T 1M OHM J 1/6W
R4105	RC/+6102JT+++	CARBON T 1K OHM J 1/6W
R4106	RC/+6471JT+++	CARBON T 470 OHM J 1/6W
R4107	RC/+4475JV+++	CARBON V 4.7M OHM J 1/4W
R4108	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R4109	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R4110	RC/+6222JT+++	CARBON T 2.2K OHM J 1/6W
R4111	RC/+6333JT+++	CARBON T 33K OHM J 1/6W
R4112	RC/+6104JT+++	CARBON T 100K OHM J 1/6W
R4113	RC/+6104JP+++	CARBON P 100K OHM J 1/6W
R4114	RC/+6154JP+++	CARBON P 150K OHM J 1/6W
R4115	RC/+6334JT+++	CARBON T 330K OHM J 1/6W
R4116	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R4117	RC/+6562JT+++	CARBON T 5.6K OHM J 1/6W
R4118	RC/+6334JT+++	CARBON T 330K OHM J 1/6W
R4119	RC/+6102JP+++	CABON P 1K OHM J 1/6W

SY-2 P.C.B.(SYSTEM CONTROL CIRCUIT)
ASSY.NO.143-0-230V-36100

Schematic Location	Parts No.	Description
		(MISCELLANEOUS)
	4 231V 84180	IR RECEIVER
	143 2 374T 05500	BRACKET
	143 2 374T 05400	BRACKET
	143 2 210T 01300	BRACKET
	143 2 681T 13100	SLEEVE
		(SWITCHES)
S3201	4 231V 69100	PUSH SWITCH
S3202	4 231V 69100	PUSH SWITCH
S3203	4 231V 69100	PUSH SWITCH
S3204	4 231V 69100	PUSH SWITCH
S3205	4 231V 69100	PUSH SWITCH
S3206	4 231V 69100	PUSH SWITCH
S3207	4 231V 69100	PUSH SWITCH

Schematic Location	Parts No.	Description
S3208	4 231V 69100	PUSH SWITCH
S3209	4 231V 24800	SLIDE SWITCH
S3210	4 231V 22000	SLIDE SWITCH
		(DIODES)
D3201	SLPY3422C++YL	LED PY3422S C YL
D3202	SLLN210RB++RE	LED LN210RP B RE
D3203	SLLN210RB++RE	LED LN210RP B RE
D3204	SLLN210RB++RE	LED LN210RP B RE
D3205	SLLN210RB++RE	LED LN210RP B RE
D3206	SLLN21RPB++RE	LED LN21RPHL B RE
D3207	SLLN21RPB++RE	LED LN21RPHL B RE
D3208	SLLN31GPB++GR	LED LN31GPHL B GR
D3209	SLLN21RPB++RE	LED LN21RPHL B RE
D3210	SLLN21RPB++RE	LED LN21RPHL B RE
D3211	SLLN310GB++GR	LED LN310GP B GR
D3212	SD1S2473+++++	DIODE 1S2473
D3213	SD1S2473+++++	DIODE 1S2473
D3214	SLLN310GB++GR	LED LN310GP B GR
D3215	SLLN310GB++GR	LED LN310GP B GR
D3216	SD1S2473+++++	DIODE 1S2473
D3217	SD1SS133+++++	DIODE 1SS133
		(CAPACITORS)
C3201	CC+50471KDYBS	CERAMIC 470PF 50V K D YB
		(RESISTORS)
R3201	RC/+4221JP++R	CARBON P 220 OHM J1/4WR25
R3202	RC/+6152JP+++	CARBON P 1.5K OHM J 1/6W
R3203	RC/+4102JP++R	CARBON P 1K OHM J1/4WR25
R3204	RC/+4221JP++R	CARBON P 220 OHM J1/4WR25
R3205	RC/+4221JP++R	CARBON P 220 OHM J1/4WR25
R3206	RC/+6332JP+++	CARBON P 3.3K OHM J 1/6W
R3207	RC/+6103JP+++	CARBON P 10K OHM J 1/6W
R3208	RC/+4271JP++R	CARBON P 270 OHM J1/4WR25
R3209	RC/+4271JP++R	CARBON P 270 OHM J1/4WR25
R3210	RC/+4271JP++R	CARBON P 270 OHM J1/4WR25
R3211	RC/+6334JP+++	CARBON P 330K OHM J 1/6W

SV-2 P.C.B.(CAPSTAN MOTOR CIRCUIT)
ASSY.NO.4-527V-52100

Schematic Location	Parts No.	Description
		(INTEGRATED CIRCUITS)
IC4301	SITA7245BP+++	IC TA7245BP
		(DIODES)
D4301	SDHZ050+C2+++	ZENER DIODE HZ5.0 C2
or	SDRD051EL1+++	ZENER DIODE RD5.1E L1
		(CAPACITORS)
C4301	CB+25473MDXRS	BC CON 0.047MF 25V M D XR
C4302	CE+25226MVHAS	ELECT 22MF 25V M V HA
C4303	CE+25226MVHAS	ELECT 22MF 25V M V HA
C4304	CE+25226MVHAS	ELECT 22MF 25V M V HA
C4305	CE+25226MVHAS	ELECT 22MF 25V M V HA
C4306	CB+25223MDXRS	BC CON 0.022MF 25V M D XR
C4307	CB+25104MDF+S	BC CON 0.1MF 25V M D F
C4308	CB+25473MDXRS	BC CON 0.047MF 25V M D XR
C4309	CB+25473MDXRS	BC CON 0.047MF 25V M D XR
C4310	CB+25473MDXRS	BC CON 0.047MF 25V M D XR
		(RESISTORS)
R3801	RC/+4681JP++R	CARBON P 680 OHM J1/4WR25
R4301	RF/+41R8JPFPR	FP-CARBON P 1.8 J 1/4WR25
R4302	RC/+4474JP++R	CARBON P 470KOHM J1/4WR25
R4303	RC/+4122JP++R	CARBON P 1.2KOHM J1/4WR25
R4304	RC/+4122JP++R	CARBON P 1.2KOHM J1/4WR25
R4305	RC/+4562JP++R	CARBON P 5.6KOHM J1/4WR25
R4307	RC/+4103JP++R	CARBON P 10K OHM J1/4WR25
R4308	RC/+4562JP++R	CARBON P 5.6KOHM J1/4WR25

TN-2 P.C.B.(TUNER CIRCUIT)
ASSY.NO.143-0-230V-34850

Schematic Location	Parts No.	Description
		(SWITCHES)
S6201	4 231V 98301	AFT
		(VARIABLE RESISTORS)
VR6201	4 222V 24800	CHANNEL PRESET
		(COILS)
L6201	4 253V 97109	HF CHOKE 4.7UH
		(INTEGRATED CIRCUITS)
IC6201	SIUPC574J++++	IC UPC574J
IC6202	SIUPC1362C+++	IC UPC1362C
		(TRANSISTORS)
Q6201	STC536+E+++K+	TR 2SC536K E
Q6202	STA562+O+++++	TR 2SA562 O
or	STA562+Y+++++	TR 2SA562 Y
or	STA984+E+++++	TR 2SA984 E
or	STA984+F+++++	TR 2SA984 F
Q6203	STA562+O+++++	TR 2SA562 O
or	STA562+Y+++++	TR 2SA562 Y
or	STA984+E+++++	TR 2SA984 E
or	STA984+F+++++	TR 2SA984 F
Q6204	STA562+O+++++	TR 2SA562 O
or	STA562+Y+++++	TR 2SA562 Y
or	STA984+E+++++	TR 2SA984 E
or	STA984+F+++++	TR 2SA984 F
Q6205	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q6206	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q6207	STA608+E+++++	TR 2SA608 E
or	STA608+F+++++	TR 2SA608 F
Q6208	SF2K304+++D++	FET 2SK304 D
or	SF2K304+++E++	FET 2SK304 E
or	SF2K68++A+L++	FET 2SK68 A L
or	SF2K68++A+M++	FET 2SK68 A M
Q6209	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q6210	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
Q6211	STC536+E+++++	TR 2SC536 E
or	STC536+F+++++	TR 2SC536 F
		(DIODES)
D6201	SD1SS132++++T	DIODE 1SS132
D6202	SD1SS132++++T	DIODE 1SS132
D6203	SD1SS132++++T	DIODE 1SS132
D6204	SD1SS132++++T	DIODE 1SS132
D6205	SD1SS132++++T	DIODE 1SS132
D6206	SD1SS132++++T	DIODE 1SS132
D6207	SD1SS132++++T	DIODE 1SS132
D6208	SD1SS132++++T	DIODE 1SS132
D6209	SD1SS132++++T	DIODE 1SS132
D6210	SD1SS132++++T	DIODE 1SS132
D6211	SD1SS132++++T	DIODE 1SS132
D6212	SD1SS132++++T	DIODE 1SS132
D6213	SD1SS132++++T	DIODE 1SS132
D6214	SD1SS132++++T	DIODE 1SS132

PW-1 P.C.B.(POWER SUPPLY CIRCUIT)
ASSY.NO.143-0-230V-31153

Schematic Location	Parts No.	Description
D6215	SD1SS132++++T	DIODE 1SS132
D6216	SD1SS132++++T	DIODE 1SS132
D6217	SD1SS132++++T	DIODE 1SS132
D6218	SD1SS132++++T	DIODE 1SS132
D6219	SD1SS132++++T	DIODE 1SS132
D6220	SD1SS132++++T	DIODE 1SS132
D6221	SD1SS132++++T	DIODE 1SS132
D6222	SD1SS132++++T	DIODE 1SS132
D6223	SD1SS132++++T	DIODE 1SS132
D6224	SD1SS132++++T	DIODE 1SS132
D6225	SD1SS133++++T	DIODE 1SS133
D6226	SD1SS133++++T	DIODE 1SS133
D6227	SD1SS133++++T	DIODE 1SS133
		(CAPACITORS)
C6201	CE+16477MVHAS	ELECT 470MF 16V M V HA
C6202	CE+50226MVHAS	ELECT 22MF 50V M V HA
C6203	CC+50103ZDYFS	CERAMIC 0.01MF 50V Z D YF
C6204	CA+25154MV++S	AL ELECT 0.15MF 25V M V
C6205	CC+50103ZDYFS	CERAMIC 0.01MF 50V Z D YF
C6206	CE+50224MVHAS	ELECT 0.22MF 50V M V HA
C6207	CC+50103ZDYFS	CERAMIC 0.01MF 50V Z D YF
C6208	CC+50103ZDYFS	CERAMIC 0.01MF 50V Z D YF
C6209	CF+50334JM++S	METAL POLY 0.33MF 50V J M
or	CM+50334KG++S	MYLAR 0.33MF 50V K G
C6210	CE+50104MVHAS	ELECT 0.1MF 50V M V HA
C6211	CE+50105MVHAS	ELECT 1MF 50V M V HA
C6212	CM+50223KM++S	MYLAR 0.022MF 50V K M
C6213	CD5R5104ZB++S	EDL CON 0.1F 5.5V Z B
C6214	CC+50103ZDYFS	CERAMIC 0.01MF 50V Z D YF
		(RESISTORS)
R6201	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R6202	RC/+6273JT+++	CARBON T 27K OHM J 1/6W
R6203	RC/+6183JT+++	CARBON T 18K OHM J 1/6W
R6204	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R6205	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R6206	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R6207	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R6208	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R6209	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R6210	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R6211	RC/+6474JT+++	CARBON T 470K OHM J 1/6W
R6212	RC/+6154JT+++	CARBON T 150K OHM J 1/6W
R6213	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R6214	RC/+6273JT+++	CARBON T 27K OHM J 1/6W
R6215	RC/+6273JT+++	CARBON T 27K OHM J 1/6W
R6216	RC/+6154JT+++	CARBON T 150K OHM J 1/6W
R6217	RC/+6124JT+++	CARBON T 120K OHM J 1/6W
R6218	RC/+6123JT+++	CARBON T 12K OHM J 1/6W
R6219	RC/+6105JT+++	CARBON T 1M OHM J 1/6W
R6220	RC/+6563JT+++	CARBON T 56K OHM J 1/6W
R6221	RC/+6821JT+++	CARBON T 820 OHM J 1/6W
R6222	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R6223	RC/+6103JT+++	CARBON T 10K OHM J 1/6W
R6224	RC/+6683JT+++	CARBON T 68K OHM J 1/6W
R6225	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R6226	RC/+6153JT+++	CARBON T 15K OHM J 1/6W
R6227	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R6228	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R6229	RC/+6101JT+++	CARBON T 100 OHM J 1/6W
R6230	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R6231	RC/+6223JT+++	CARBON T 22K OHM J 1/6W
R6232	RC/+6153JT+++	CARBON T 15K OHM J 1/6W

Schematic Location	Parts No.	Description
		(MISCELLANEOUS)
	144 2 368T 00600	HEAT SINK
F5151	⚠ 4 234V 16008	FUSE
		(COILS)
L5101	4 253V 88622	HF CHOKE 56UH
		(TRANSISTORS)
Q5106	STC3179G+++++	TR 2SC3179 G
or	STC3179O+++++	TR 2SC3179 O
or	STC3179R+++++	TR 2SC3179 R
or	STC3179Y+++++	TR 2SC3179 Y
or	STD313+E+++++	TR 2SD313 E
or	STD313+F+++++	TR 2SD313 F
Q5107	STC3179G+++++	TR 2SC3179 G
or	STC3179O+++++	TR 2SC3179 O
or	STC3179Y+++++	TR 2SC3179 Y
or	STD313+E+++++	TR 2SD313 E
or	STD313+F+++++	TR 2SD313 F
		(DIODES)
D5101	⚠ 4 202V 13500	DIODE
or	⚠ 4 202V 14200	DIODE
D5102	⚠ 4 202V 13500	DIODE
or	⚠ 4 202V 14200	DIODE
D5103	⚠ 4 202V 13500	DIODE
or	⚠ 4 202V 14200	DIODE
D5104	⚠ 4 202V 13500	DIODE
or	⚠ 4 202V 14200	DIODE
D5108	SDGZA110X++++	ZENER DIODE GZA11X
D5109	SDGMA01++++++	DIODE GMA01
D5113	SDDS135+C++++	DIODE DS135 C
or	SDDS135+D++++	DIODE DS135 D
D5114	SDDS135+C++++	DIODE DS135 C
or	SDDS135+D++++	DIODE DS135 D
D5115	SDBZ300++++++	ZENER DIODE BZ300
D5116	SDDS135+C++++	DIODE DS135 C
or	SDDS135+D++++	DIODE DS135 D
D5118	SDGZA062Y+++T	ZENER DIODE GZA6.2Y
D5120	SDGZA047X++++	ZENER DIODE GZA4.7X
D5121	SDDS135+C++++	DIODE DS135 C
or	SDDS135+D++++	DIODE DS135 D
		(CAPACITORS)
C5101	CE+16336MVHAS	ELECT 33MF 16V M V HA
C5102	CE+16476MVHAS	ELECT 47MF 16V M V HA
C5104	CE100226MY++S	ELECT 22MF 100V M Y
C5105	CE100107MY++S	ELECT 100MF 100V M Y
C5106	CE+35107MVHAS	ELECT 100MF 35V M V HA
C5111	CE+10336MVHAS	ELECT 33MF 10V M V HA
C5112	CE+10476MVHAS	ELECT 47MF 10V M V HA
C5151	4 223V 23609	CAPACITOR
C5190	CE+50334MVHAS	ELECT 0.33MF 50V M V HA
C5191	CE+50104MVHAS	ELECT 0.1MF 50V M V HA
		(RESISTORS)
R5109	RM/+2470JPRF+	METAL P 47 OHM J 1/2W RF
R5110	RC/+4562JP++R	CARBON P 5.6KOHM J1/4WR25
R5112	RC/+4562JT++R	CARBON T 5.6KOHM J1/4WR25
R5113	RM++1182JFOS+	METAL F 1.8K OHM J 1W OS
or	RM++1182JPO++	METAL P 1.8K OHM J 1W O
R5115	RM++1472JFOS+	METAL F 4.7K OHM J 1W OS
or	RM++1472JPO++	METAL P 4.7K OHM J 1W O
R5118	RC/+4333JT++R	CARBON T 33K OHM J1/4WR25
R5119	RC/+4151JT++R	CARBON T 150 OHM J1/4WR25
R5120	RC/+4151JT++R	CARBON T 150 OHM J1/4WR25
R5121	RC/+4472JT++R	CARBON T 4.7KOHM J1/4WR25
R5151	⚠ RS/+2335KP+++	SOLID P 3.3M OHM K 1/2W
or	⚠ RS/+2335MP+++	SOLID P 3.3M OHM M 1/2W
R5190	RF/+22R2JPFP+	FP-CARBON P 2.2 J 1/2W
R5191	RF/+22R2JPFP+	FP-CARBON P 2.2 J 1/2W

PW-2 P.C.B.(POWER SUPPLY CIRCUIT)
ASSY.NO.143-0-230V-31253

Schematic Location	Parts No.	Description
		(COILS)
L5201	4 252V 12100	LF CHOKE 200UH
or	4 252V 12200	LF CHOKE 200UH
L5202	4 471V 10200	CORE
		(INTEGRATED CIRCUITS)
IC5201	SISTK7217++++	IC STK7217
		(DIODES)
D5201	SDBZ150++++++	ZENER DIODE BZ150
		(CAPACITORS)
C5201	4 223V 23100	2200MF 50V
or	CE+50228MVHAS	ELECT 2200MF 50V M V HA
C5202	CE+16228MVHAS	ELECT 2200MF 16V M V HA
C5203	CE+10107MVHAS	ELECT 100MF 10V M V HA
C5204	CE+16106MVHAS	ELECT 10MF 16V M V HA
C5205	CE+10226MVHAS	ELECT 22MF 10V M V HA
C5206	CC+50182KDYBS	CERAMIC 0.0018MF 50V K DYB
		(RESISTORS)
R5201	RM/+23R9JPRF+	METAL P 3.9 OHM J 1/2WRF
R5202	RM/+23R9JPRF+	METAL P 3.9 OHM J 1/2WRF

PW-3 P.C.B.(POWER CIRCUIT)
ASSY.NO.143-0-230V-31353

Schematic Location	Parts No.	Description
		(INTEGRATED CIRCUITS)
IC5101	SINJM7809A+++	IC NJM7809A

TERMINAL BOARD
ASSY.NO.143-0-237V-19100

Schematic Location	Parts No.	Description
		(COILS)
L8501	4 257V 11900	ANTENNA COIL

SANYO ELECTRIC INC.
Jan./'84/5500 NS Printed in Japan

CIRCUIT DIAGRAMS & PRINTED CIRCUIT BOARDS

VCR7200

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NOTES:

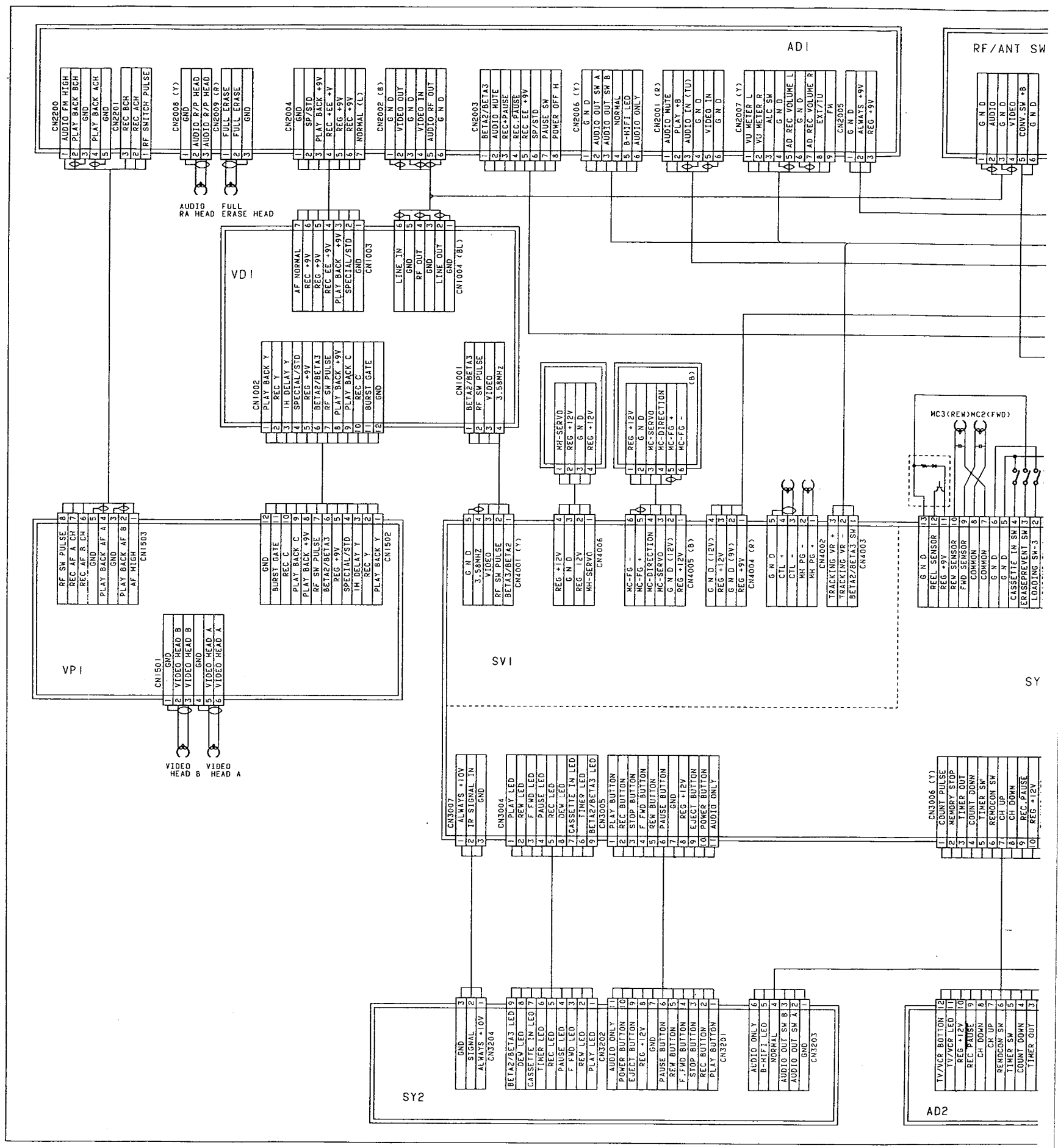
1. All resistance values in "OHMS" unless otherwise noted. (K=1,000 M=1,000,000)
2. All capacitance values in "μfd" unless otherwise noted. p=pico farad
3. All inductance values in "mH" unless otherwise noted. μ=micro henry
4. Marks indicated in each connector indicate the following color of wire.

B : Black	V : Violet	BR : Brown
R : Red	Y : Yellow	GR : Green
W : White	G : Gray	BL : Blue
P : Pink	LB: Light Blue	OR : Orange

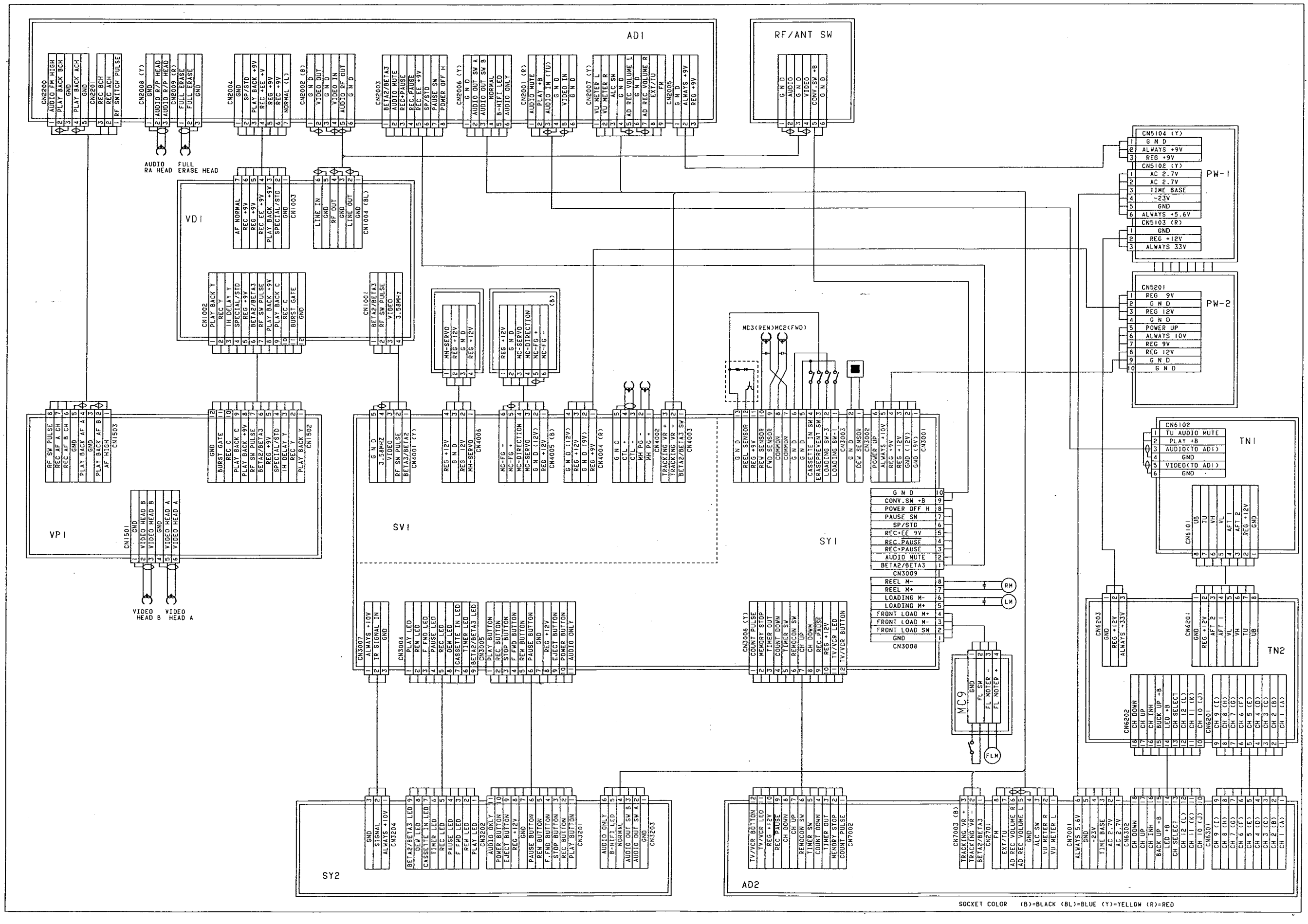
PRODUCT SAFETY NOTICE

THE COMPONENTS DESIGNATED BY A SYMBOL (⚠) IN THIS SCHEMATIC DIAGRAM DESIGNATES COMPONENTS WHOSE VALUE ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A SYMBOL NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST. DO NOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLTAGE RATINGS SHOWN.

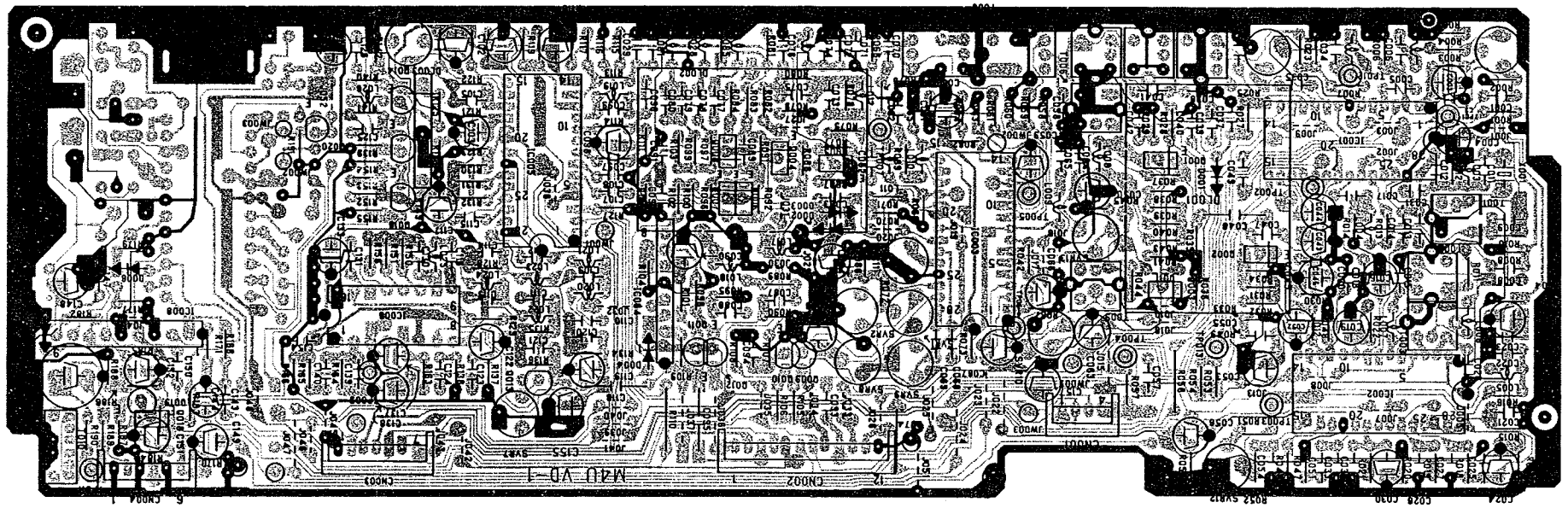
OVERALL WIRING DIAGRAM



OVERALL WIRING DIAGRAM



A VCR7200

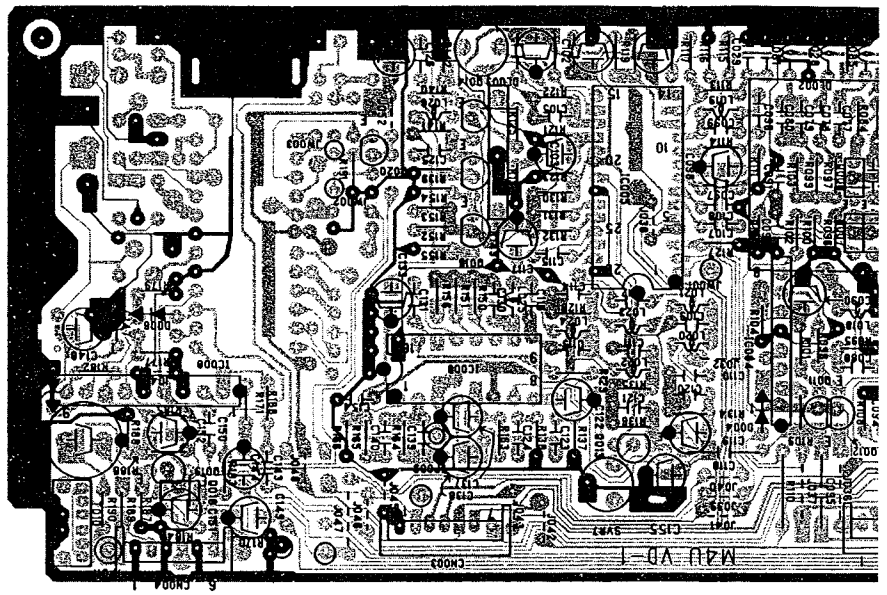


P.C.B. VD-1 VIDEO

Lo. No. 1001 ~

Parts								
IC	IC001 IC002	IC003	IC004	IC005	IC006	IC008		
Tran-sistor	Q001 Q002 Q003	Q004 Q005 Q008 Q009 Q010 Q011 Q012	Q006 Q007	Q013	Q014 Q015 Q016	Q018 Q019		
Diode	D001	D002 D003				D006	D007	
ADJ Parts	SVR15	SVR14 SVR12	SVR13	SVR10	SVR1 SVR2 SVR3 SVR8 SVR11	SVR7	SVR6	

IC1001 Pin (10) Pin (6)	Y = 0.36 Vp-p Y = 1.2 Vp-p
IC1001 Pin (20) IC1005 Pin (3)	Y = 0.68 Vp-p Y = 0.56 Vp-p
IC1001 Pin (13) (βIII)	0.18V p-p
IC1002 Pin (4)	TP1
IC1002 Pin (23)	4.6V p-p TP7
IC1001 Pin (3)	1V p-p
IC1005 Pin (27) IC1005 Pin (15)	Y = 0.86 Vp-p Y = 0.3 Vp-p

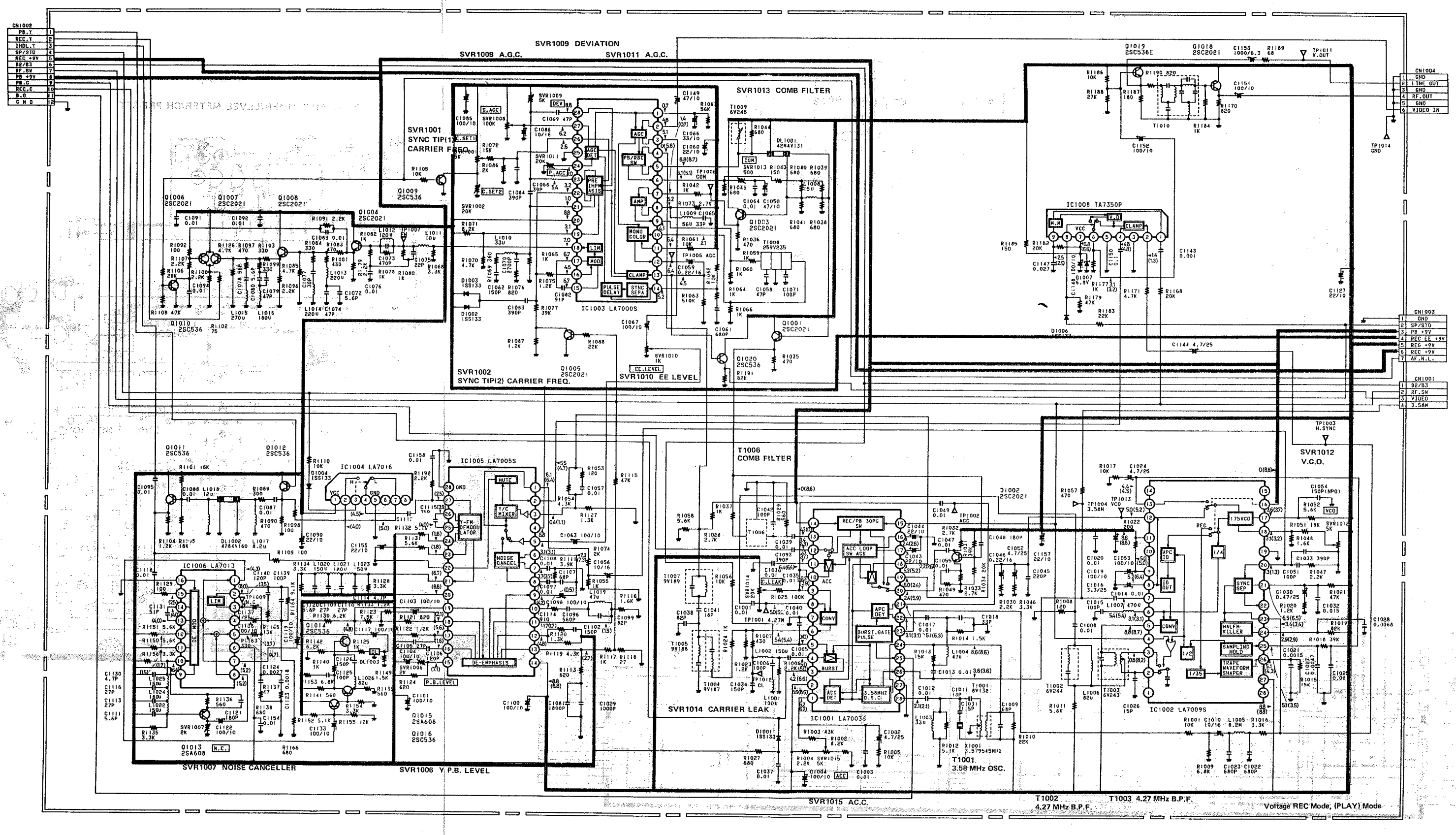


VIDEO					
	IC004	IC005	IC006		IC008
Q010 Q012 Q011		Q013	Q016		Q018
Q006 Q007			Q015		Q019
Q005 Q004 Q008			Q014		
D005				D006	D007
SVR7					
SVR6					

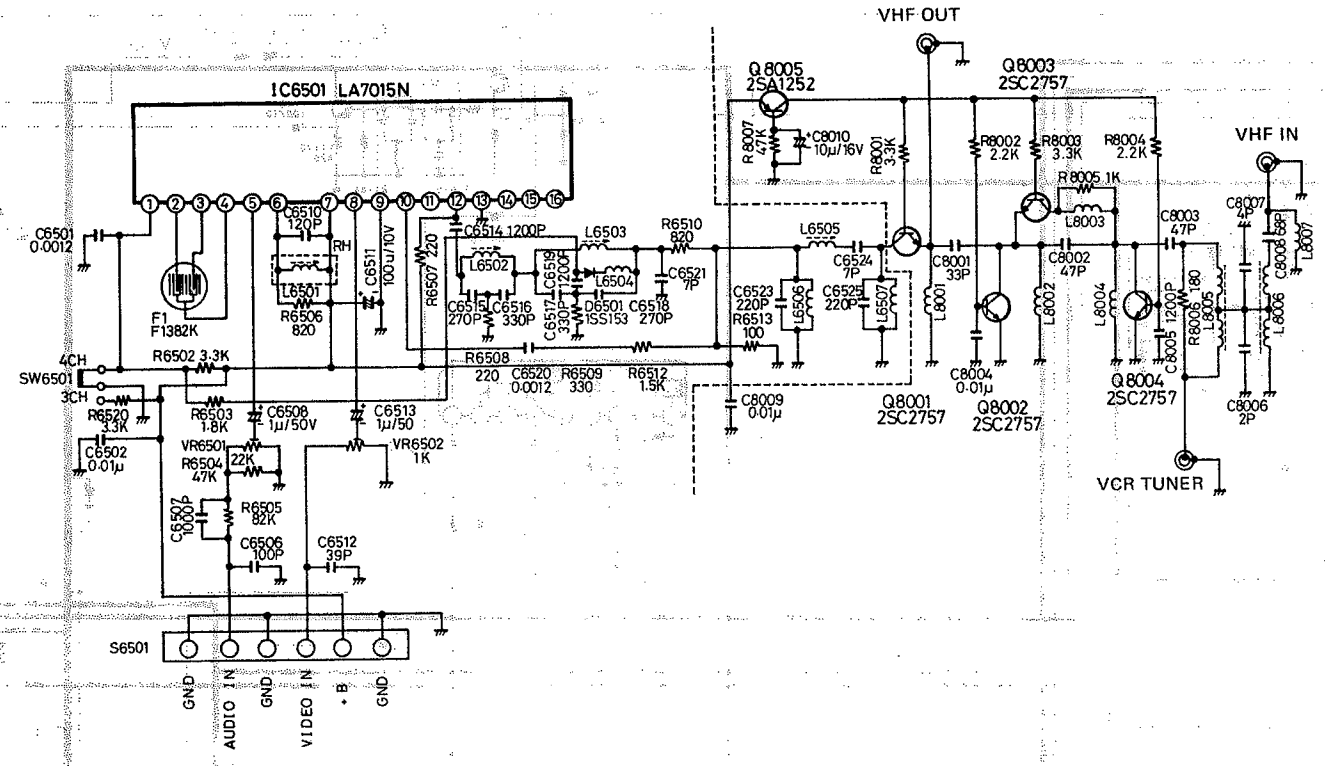
SVR6

IC1006 Pin (27) Y = 0.86 Vp-p IC1006 Pin (15) Y = 0.3 Vp-p Y	
IC1002 Pin (4)	TP11 2V p-p
IC1002 Pin (23) 4.6Vp-p	TP7 1.7Vp-p
IC1001 Pin (3) 1V p-p	IC1001 Pin (16) 0.35Vp-p
IC1001 Pin (13) (βIII) 0.18V p-p	IC1001 Pin (13) 0.76V p-p
IC1001 Pin (20) Y = 0.68 Vp-p IC1005 Pin (3) Y = 0.56 Vp-p Y	
IC1001 Pin (10) Y = 0.36 Vp-p Pin (6) Y = 1.2 Vp-p Y	IC1005 Pin 19 0.6V p-p

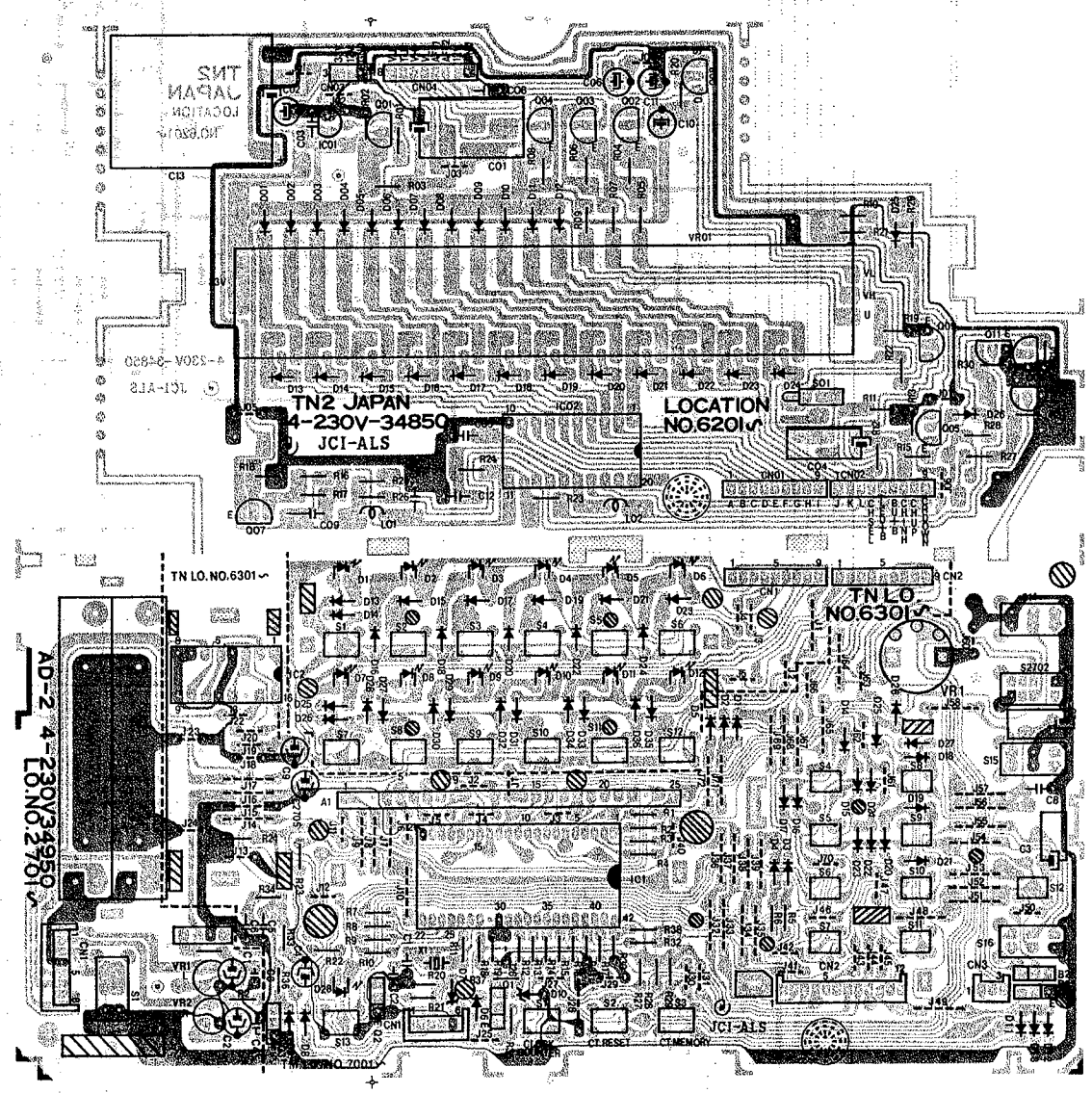
P.C.B. VD-1 VIDEO CIRCUIT



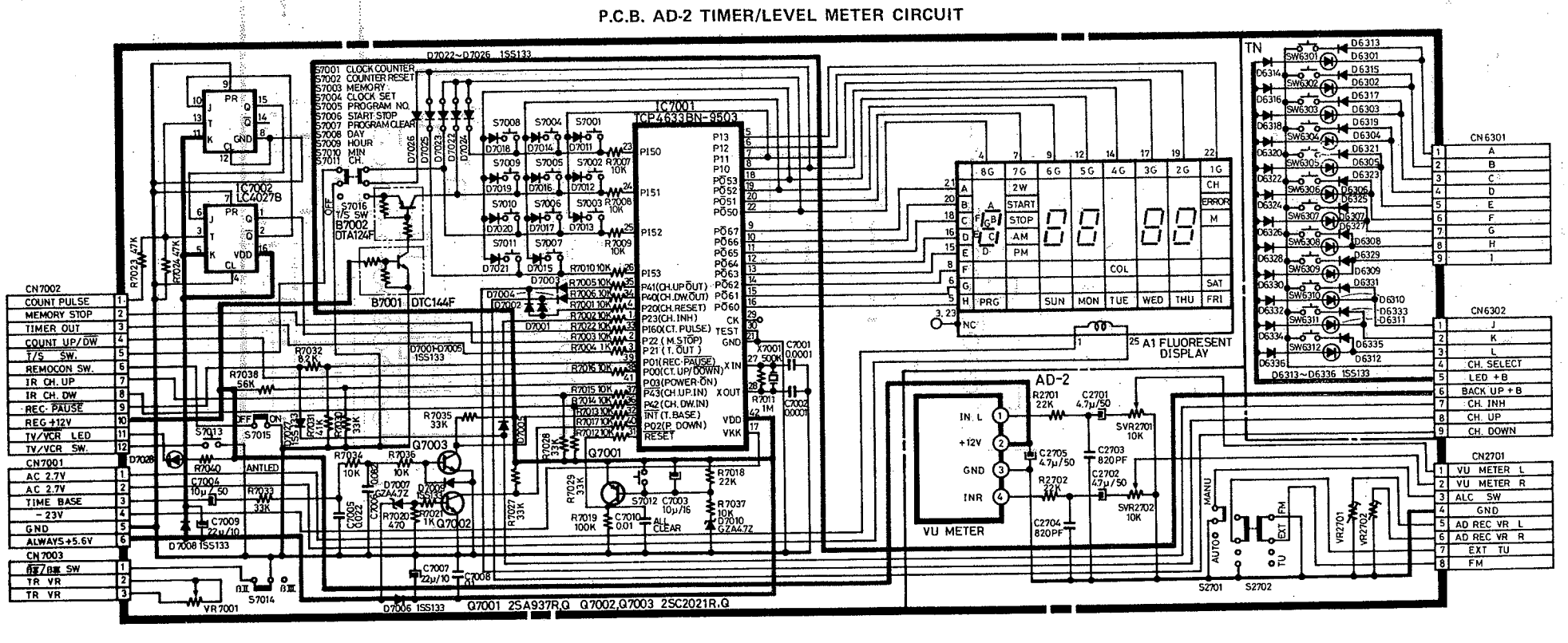
P.C.B. AT-1 RF CONVERTER/ANTENNA SELECT CIRCUIT

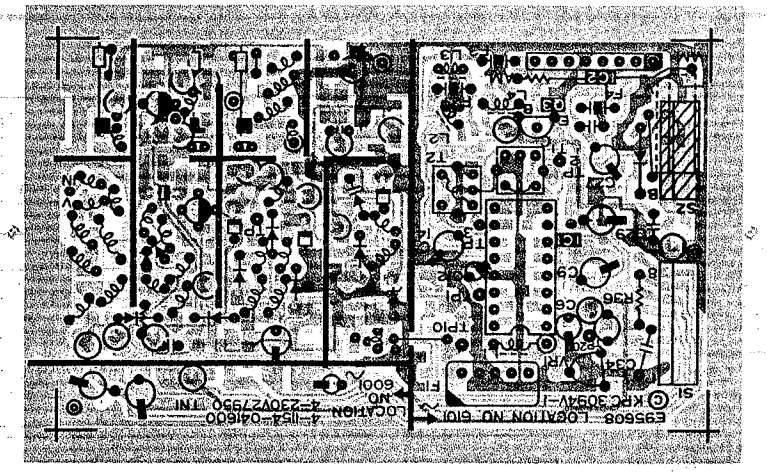


P.C.B. AD-2 TIMER/LEVEL METER/CH PRE-SET

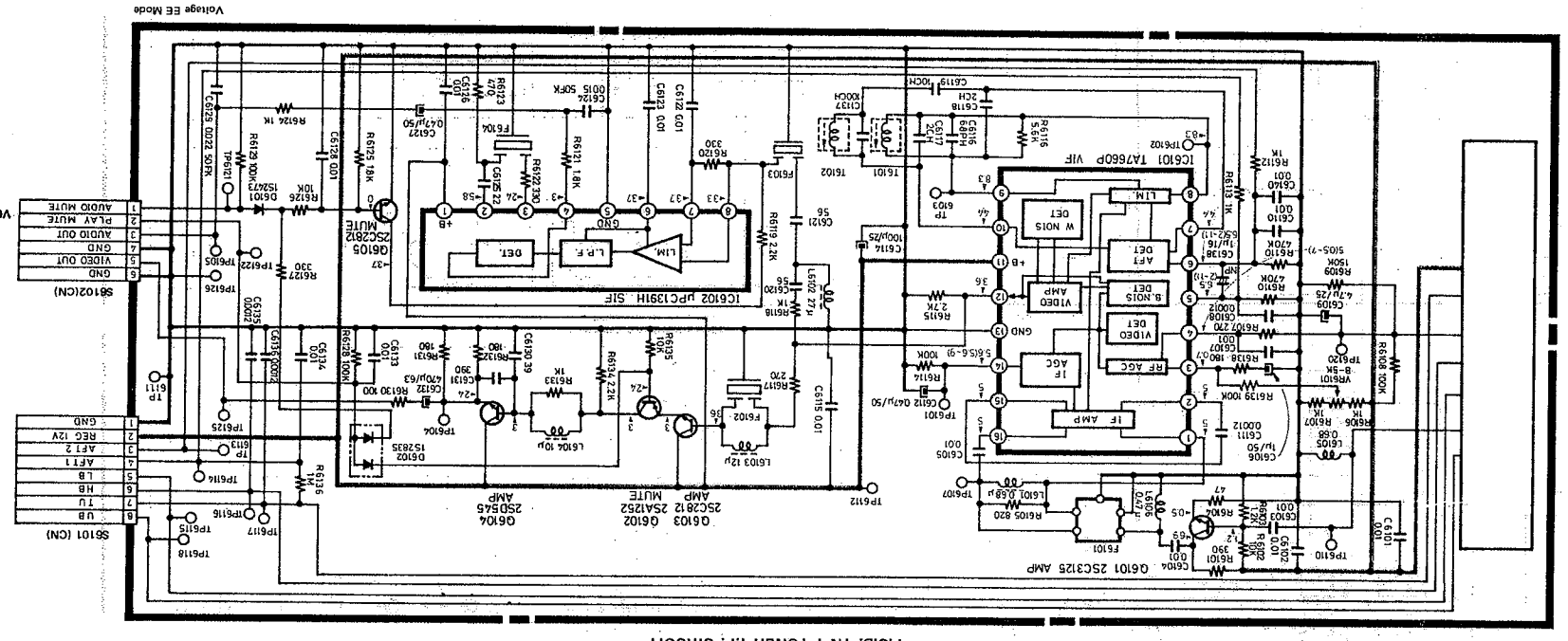


P.C.B. AD-2 TIMER/LEVEL METER CIRCUIT

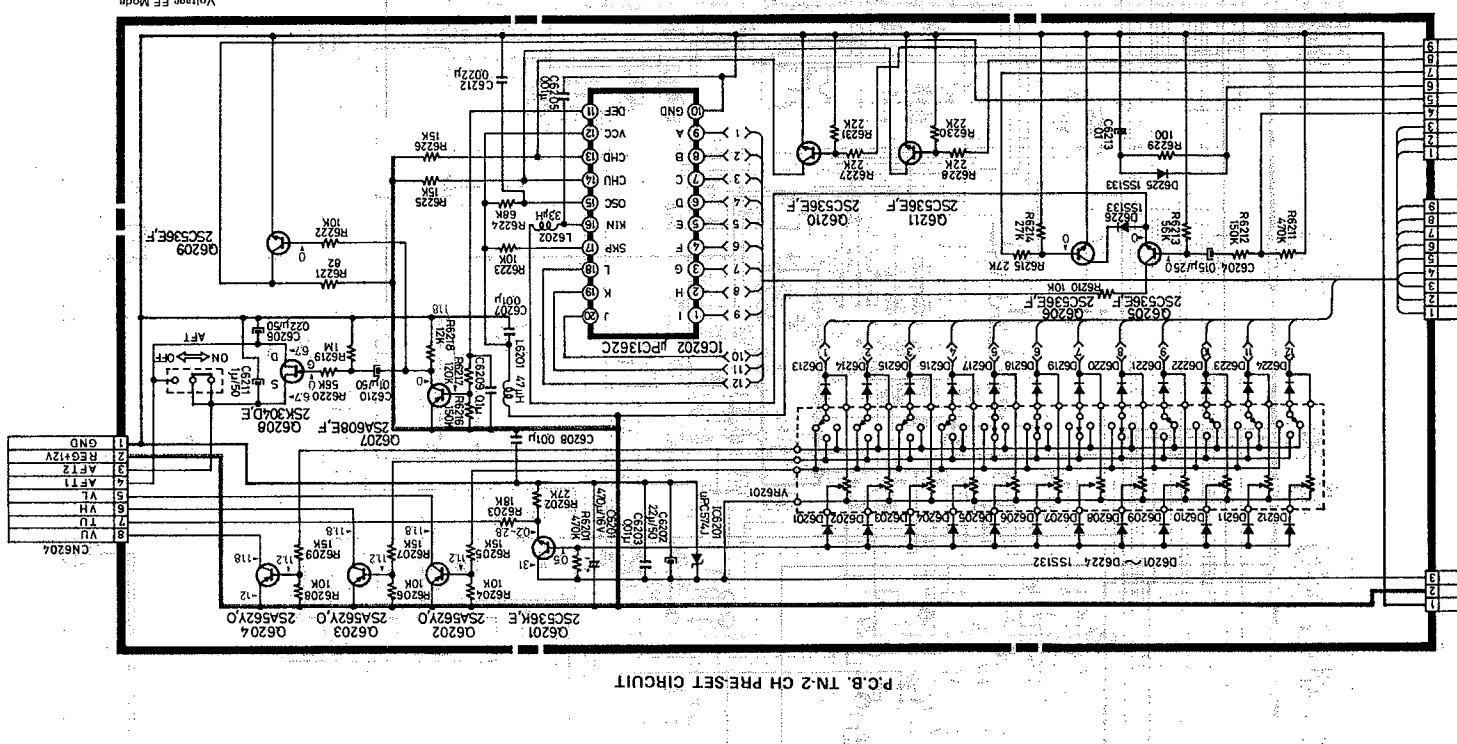




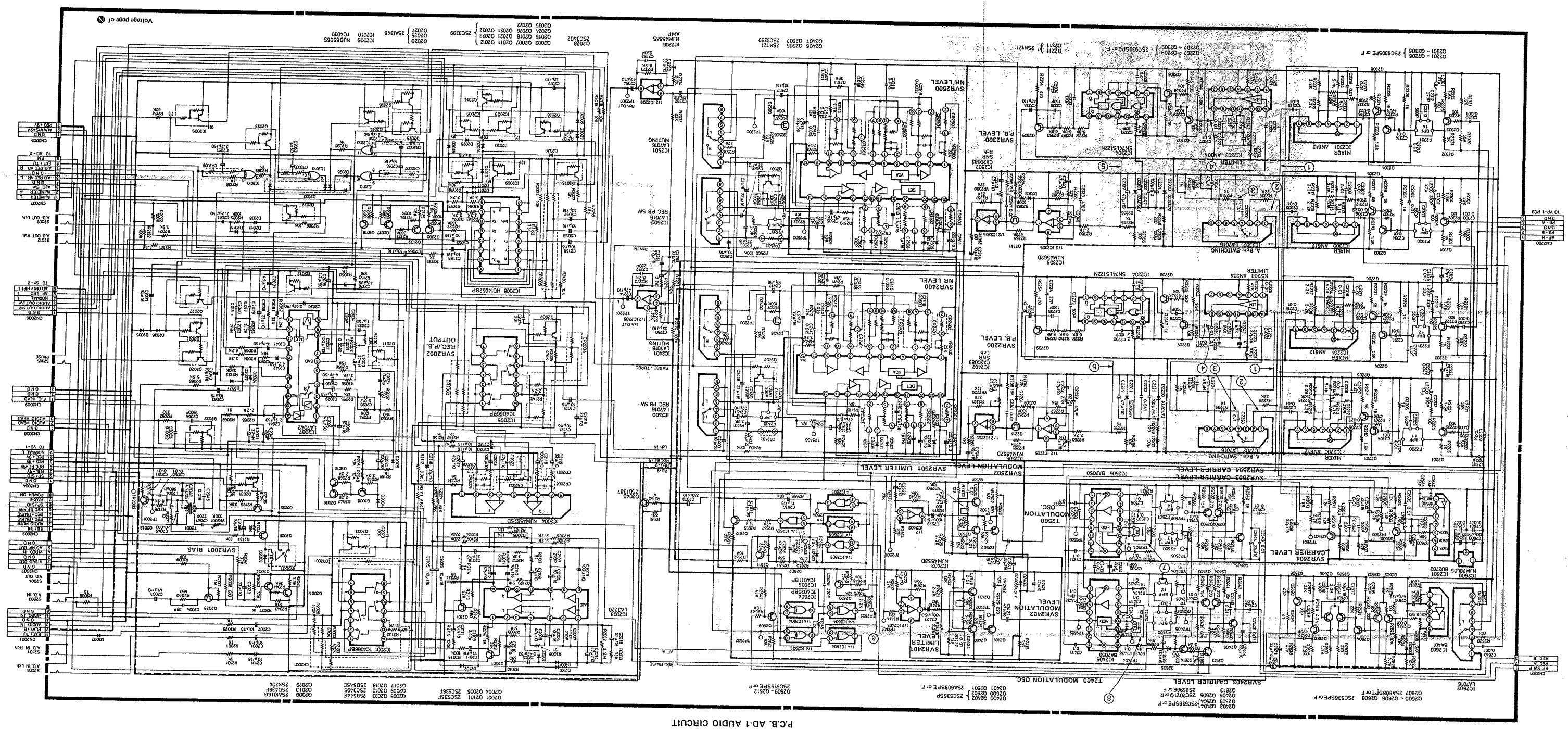
P.C.B. TN-1 I.F.



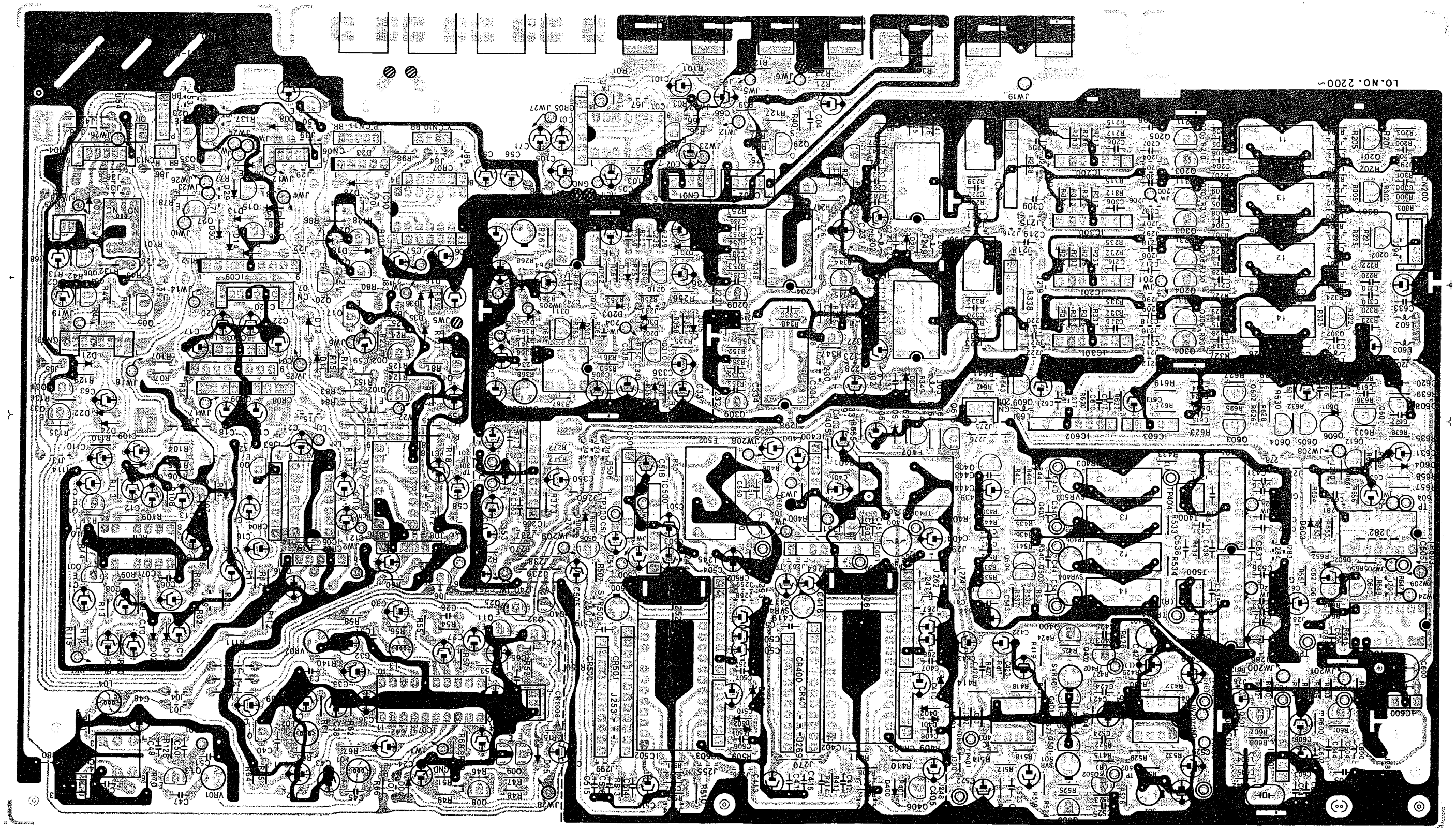
P.C.B. TN-1 TUNER I.F. CIRCUIT



P.C.B. TN-2 CH PRE-SET CIRCUIT

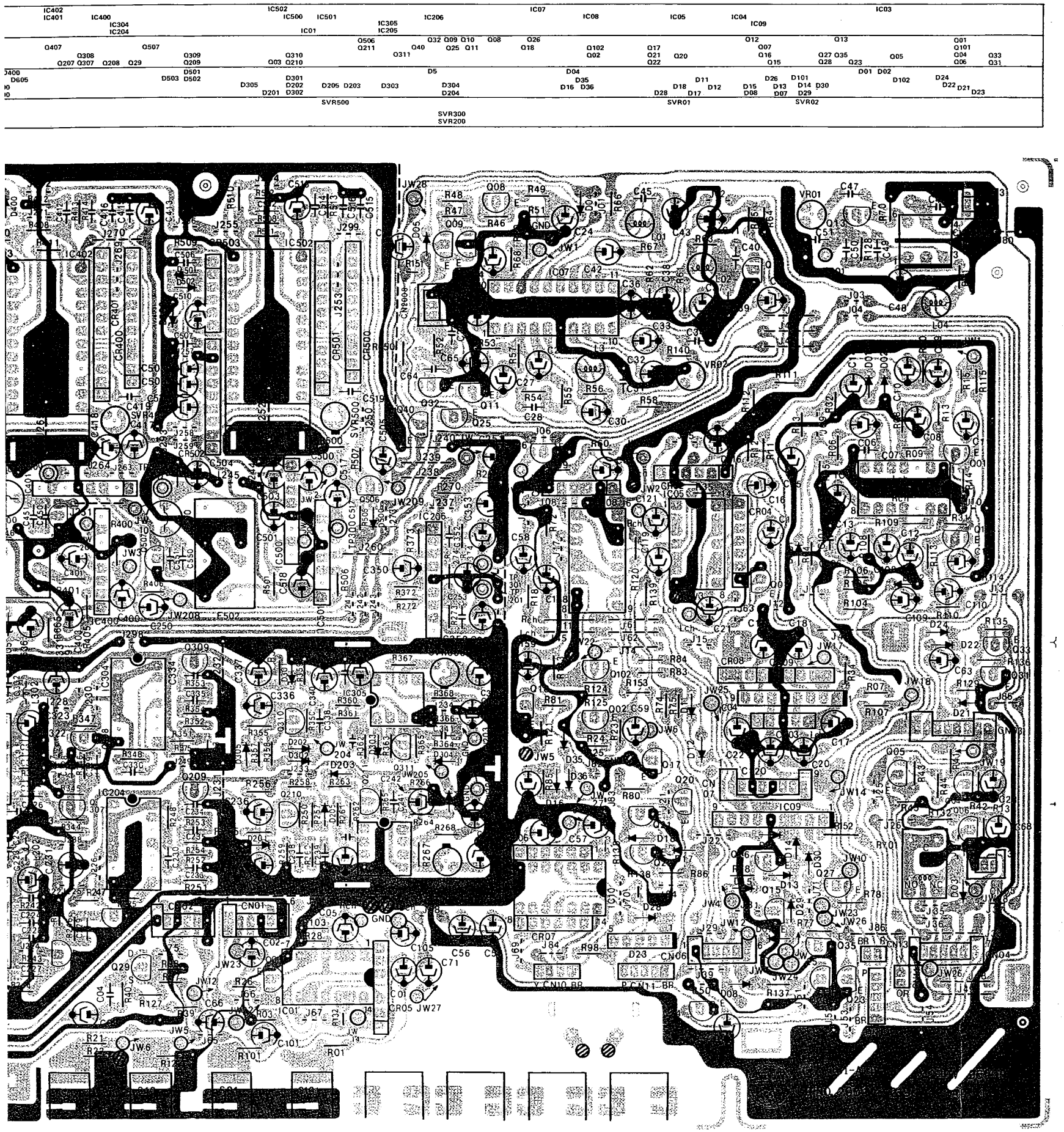


P.C.B. AD-1 AUDIO CIRCUIT

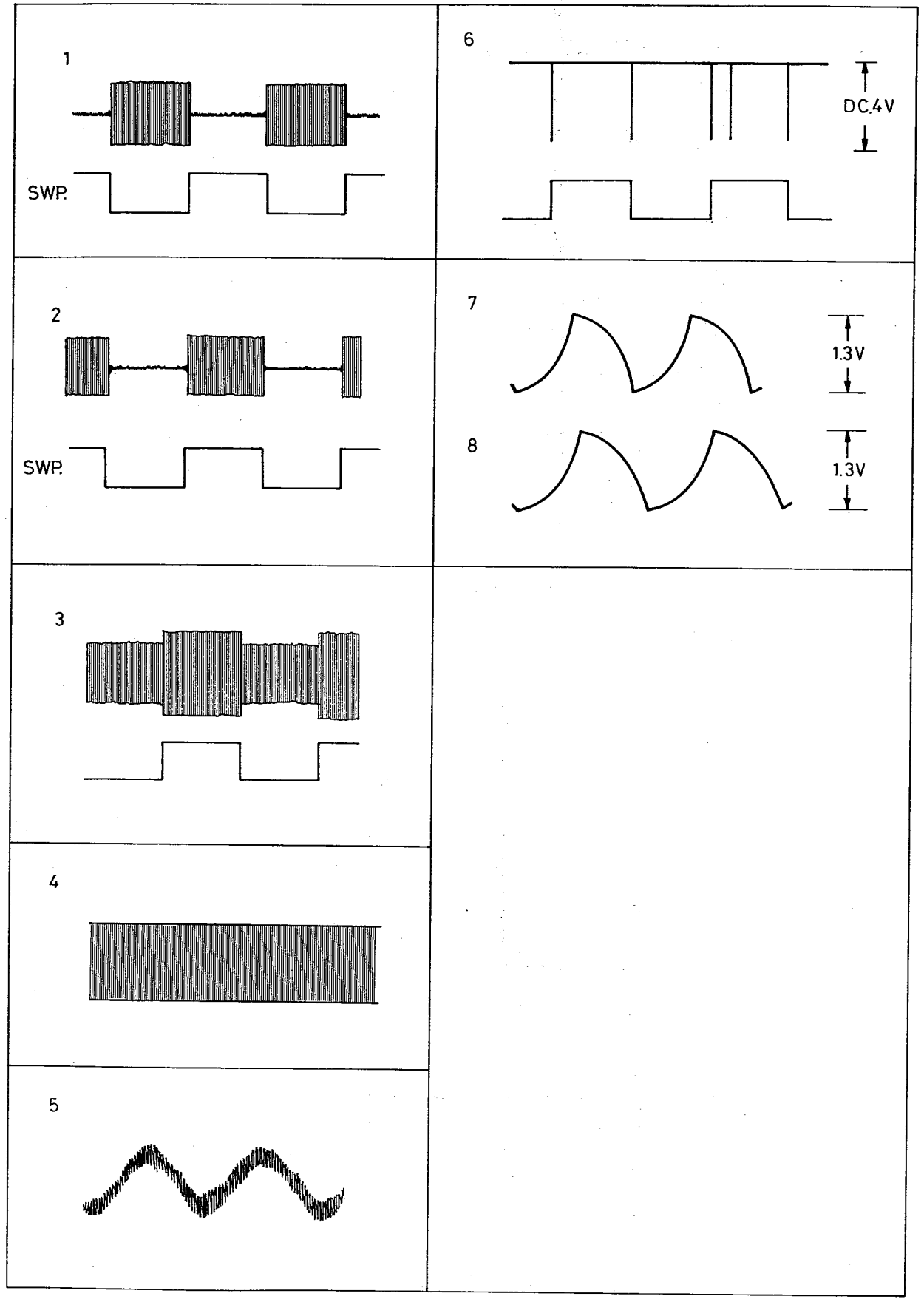


IC	IC600 IC601 IC602 IC603 IC604 IC605 IC606 IC607 IC608 IC609 IC610 IC611 IC612 IC613 IC614 IC615 IC616 IC617 IC618 IC619 IC620 IC621 IC622 IC623 IC624 IC625 IC626 IC627 IC628 IC629 IC630 IC631 IC632 IC633 IC634 IC635 IC636 IC637 IC638 IC639 IC640 IC641 IC642 IC643 IC644 IC645 IC646 IC647 IC648 IC649 IC650 IC651 IC652 IC653 IC654 IC655 IC656 IC657 IC658 IC659 IC660 IC661 IC662 IC663 IC664 IC665
Tran-sistor	Q601 Q602 Q603 Q604 Q605 Q606 Q607 Q608 Q609 Q610 Q611 Q612 Q613 Q614 Q615 Q616 Q617 Q618 Q619 Q620 Q621 Q622 Q623 Q624 Q625 Q626 Q627 Q628 Q629 Q630 Q631 Q632 Q633 Q634 Q635 Q636 Q637 Q638 Q639 Q640

P.C.B. AD-1 AUDIO



WAVEFORM OF AD-1



P.C.B. SY-1 SYSTEM CONTROL CIRCUIT

Q3001 2SD471LA,KA IC3005 LA2400 IC3004 LA7011 TAPE END SENSOR IC3007 MF DRIVE IC3008 ML DRIVE

B3023 2SC3399 5V REGULATOR

CN3001
GND (+9V) 1
GND (+12V) 2
+12V 3
+9V 4
ALWAYS +10V 5
POWER UP 6
TO POWER CN3002

DEW SENSOR 1
GND 2
TO DEW SENSOR CN3003

LO - 1 SW 1
LO - 3 SW 2
3
CASSETTE IN SW 4
GND 5
GND 6
COMMON 7
COMMON 8
FWD SENSOR 9
REW SENSOR 10
+9V 11
REEL SENSOR 12
GND 13
TO MECHANISM

CN3004
PLAY LED 1
REW LED 2
F.FWD LED 3
PAUSE LED 4
REC LED 5
TIMER LED 6
CASSETTE IN LED 7
DEW LED 8
βII / βIII LED 9
TO SY-2

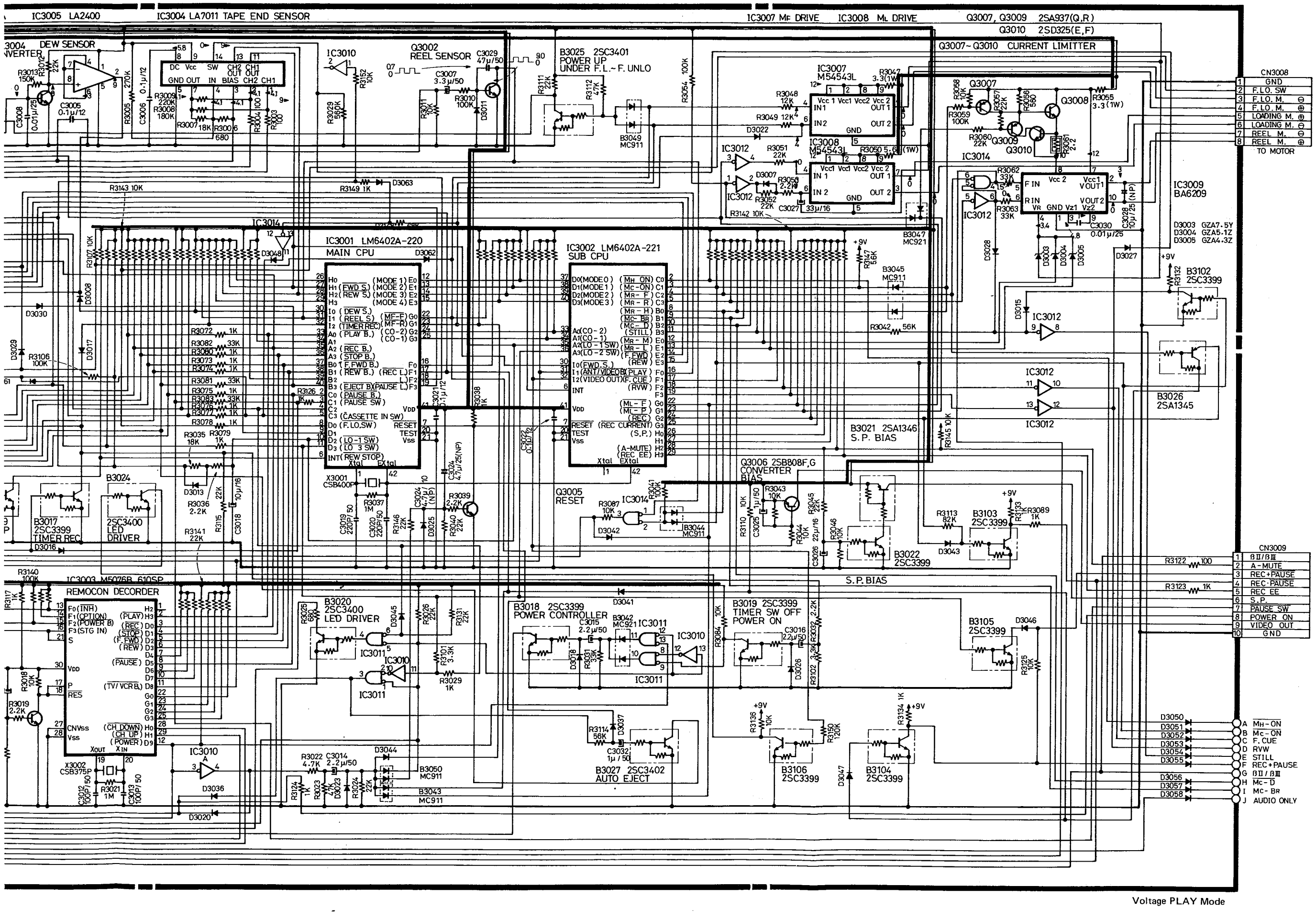
CN3005
PLAY BUTTON 1
REC BUTTON 2
STOP BUTTON 3
F.FWD BUTTON 4
REW BUTTON 5
PAUSE BUTTON 6
GND 7
+12V 8
EJECT BUTTON 9
POWER BUTTON 10
AUDIO ONLY 11
TO SY-2

CN3006
COUNT PULSE 1
REW STOP 2
TIMER REC 3
COUNT DOWN 4
TIMER SW 5
REMOCON SW 6
CH UP 7
CH DOWN 8
REC-PAUSE 9
+12V 10
TV/VCR LED 11
TV/VCR BUTTON 12
TO SY-2

CN3007
ALWAYS +10V 1
SIG IN 2
GND 3
TO SY-2

R3014 10K REC REJECT UNDER LOADING B3048 MC911 D3012 D3038
Q3004 INVERTER DEW SENSOR
C3001 22μ/16 C3002 0.1μ/12 C3003 1μ/50 C3004 0.1μ/12 C3008 0.01μ/25 C3005 0.1μ/12
D3001 GZA5.6V
R3012 22K R3013 150K R3005 270K C3006 0.1μ/12 R3009 220K R3008 180K R3007 18K R3006 680 R3004 100 R3003 1000
DC Vcc SW CH2 CH1 OUT OUT
GND OUT IN BIAS CH2 CH1
IC3010 R3152 10K R3029 560K
Q3002 REEL SENSOR C3029 47μ/50 C3007 3.3μ/50 R3011 10K R3010 100K D3011
B3025 2SC3401 POWER UP UNDER F.L.~F. UNLO R3111 22K R3112 47K B3049 MC911 R3054 100K
IC3007 M54543L R3047 3.3(1W) R3048 12K R3049 12K D3022
IC3008 M54543L R3050 5.6(1W) R3051 22K R3052 22K C3027 33μ/16 R3142 10K
IC3012 D3007 R3053 2.2K
R3143 10K D3049 R3149 1K D3063
IC3014 R3107 10K D3048
IC3001 LM6402A-220 MAIN CPU D3062
IC3002 LM6402A-221 SUB CPU
B3047 MC921 +9V R3147 56K B3045 MC911 R3042 56K
B3101 2SC3399 R3015 47K B3101
B3013 2SC3400 LED DRIVER D3024
IC3014 D3029 D3030 D3017 R3106 100K D3061
R3072 1K R3082 33K R3080 1K R3073 1K R3074 1K R3081 33K R3075 1K R3083 33K R3076 1K R3077 1K R3078 1K
R3126 2K C3021 0.1μ/12 R3038 1K
R3035 18K R3079 1K D3031 D3013 R3036 2-2K R3115 22K C3018 10μ/16 R3141 22K
B3021 2SA1346 S.P. BIAS R3145 10K
X3001 CSB400P R3037 1M C3019 220P/50 C3020 220P/50 C3024 4.7μ/25(NP) C3022 0.1μ/12
R3130 2-2 (1/2W) R3100 68K R3016 3.3K B3016 D3033 C3009 22μ/16 2SC3402 TIMER SLEEP
B3015 2SC3399 REW STOP B3017 2SC3399 TIMER REC D3016 B3024 2SC3400 LED DRIVER
R3090 10K B3041 MC921 D3034 R3120 1K D3019
IC3010 R3140 100K IC3003 M50768-610SP REMOCON DECORDER
R3117 1K C3011 4.7μ/25 R3018 10K R3019 2.2K R3020 22K C3010 0.1μ/12 D3002 GZA5.1V D3021
Q3003 RESET
X3002 CSB375P C3012 100P/50 R3021 1M C3013 100P/50
R3095 1K R3085 1K R3086 1K R3092 680 R3093 1K R3097 1K
IC3010 A D3036 D3020
R3022 4.7K C3014 2-2μ/50 D3023 R3024 22K R3124 1K R3023 47K D3044 B3050 MC911 B3043 MC911
B3020 2SC3400 LED DRIVER R3025 680 D3045 R3026 22K R3131 22K R3029 1K IC3011 IC3010
B3018 2SC3399 POWER CONTROLLER C3015 2-2μ/50 B3042 MC921 IC3011 IC3010 D3041
B3019 2SC3399 TIMER SW OFF POWER ON R3084 10K C3016 2.2μ/50 R3032 2.2K R3102 2.2K D3026
R3114 56K D3037 C3032 1μ/50 B3027 2SC3402 AUTO EJECT
R3136 10K B3106 2SC3399 R3150 120K R3134 1K +9V B3104 2SC3399 D3047
Q3006 2SB808F,G CONVERTER BIAS R3041 100K R3087 10K D3042 B3044 MC911 R3110 10K C3025 1μ/50 R3043 10K R3044 10K R3045 2.2K R3046 10K C3026 22μ/16 B3022 2SC3399 D3043 R3113 82K
Q3005 RESET
S.P. BIAS
R3058 10K R3055 100K
IC
```
```

P.C.B. SY-1 SYSTEM CONTROL CIRCUIT



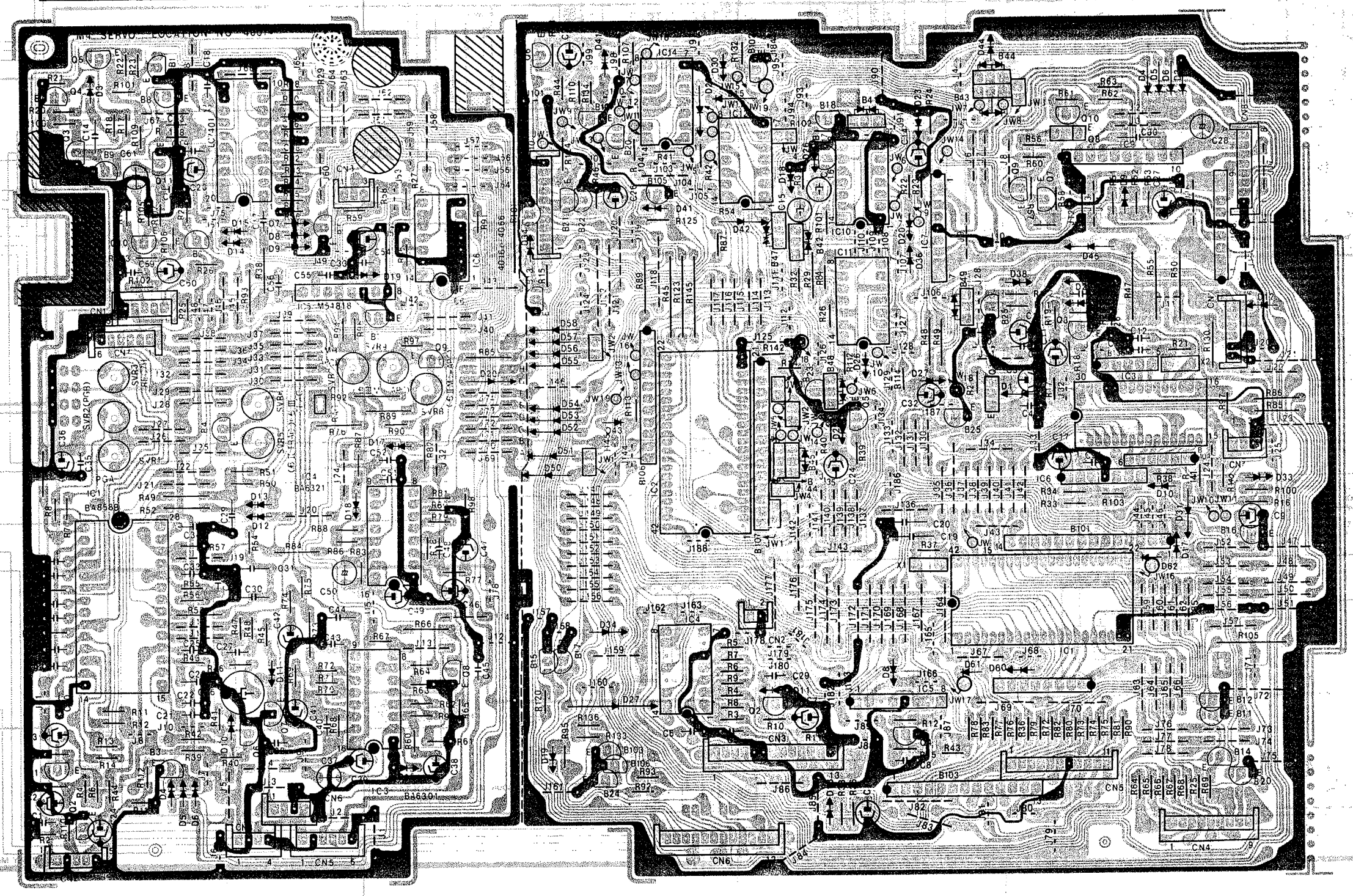
P.C.B. SY-1 SYSTEM CONTROL/SERVO

Lo. No. 4001 ~

IC	IC1	IC2	IC5	IC3	IC4	IC6
Transistor	Q4 Q3 Q5 B9 Q10 B1 B8 Q11 B13 B2 B4 Q1 Q2	Q6 Q7 B5	B7	Q9 Q8		
Diode	D3 D15 D13 D14 D12 D11 D10 D4 D5 D6 D7 D8 D9 D19 D18 D17 D16 D20					
ADJ. Parts	SVR3 SVR2 SVR1 SVR6 SVR5	SVR7	SVR9	SVR8		

Lo. No. 3001 ~

IC	IC14 IC4 IC2 IC12	IC10 IC11 IC5	IC7	IC1	IC8 IC9 IC3	IC8
Transistor	Q6 B101 B21 B22 B13 B17 B18 B104 B20 B103 B106 B24 B105 B102 B107 B47 B45 B42 B18 B17 B23 B48 Q5 Q2 B41 Q4 B25 B49 B44 B43 B25 Q1 Q9 Q7 Q10 Q8 Q3 B101 B105 B104 B12 B14 B16 B11 B20					
Diode	D34 D58 D57 D56 D50 D55 D19 D64 D63 D52 D51 D41 D43 D34 D27 D23 D30 D15 D42 D11 D18 D26 D13 D25 D26 D20 D36 D8 D23 D27 D61 D44 D45 D2 D21 D38 D1 D60 D9 D4 D5 D6 D3 D62 D10 D17 D31 D12 D33					
ADJ. Parts						



SVR4001
HEAD SWITCHING POSITION

SVR4002 HEAD SWITCHING POSITION

SVR4003
APC LOCK PHASE

Q4001
2SC536F

Q4010
2SA933QorR

Q4011
2SC536F

Q4003
2SC536F

Q4004
2SC536F

Q4005
2SA933QorR

B4002
2SA1345

βII on

CN4003
βII / βIII SW
TRAC. VR
TRAC. VR
TO TM

TRACKING VOLUME
100K

IC4001
BA858B

CN4002
MH PG
MH PG
CTL
CTL
GND

PG COIL
CTL HEAD

CN4007
CTL P.
Mc - APC
CTL SIG.
RF SW P.
MH - APC
GND
(CHECKER)

B4004
2SA1345

Q4007
2SA933QorR

Q4006
2SC536F

SVR4005 TRACKING (βII)
SVR4006 TRACKING (βIII)

Q4002
2SC536F

IC4003
BA6301

IC4004
BA6321

Q4012
2SC536F

Q4009
2SA933QorR

Q4008
2SC536F

SVR4007 APC LOCK VOLTAGE

SVR4008 APC LOCK VOLTAGE (CAPSTAN, βII)

SVR4009 APC LOCK VOLTAGE (CAPSTAN, βIII)

IC4002
LC7401

IC4005
M58478

B4003
2SC3399

B4005
2SC3399

B4006
2SC3399

B4007
2SC3399

B4008
2SC3399

B4009
2SC3399

B4001
2SC3399

B4010
2SC3399

B4011
2SC3399

Q4013
2SC536F

CN4001
βIII
RF SW P.
V - SIG
3.58MHz
GND
TO VD

CN4004
REG 9V + B
GND (9V)
REG 12V
GND (12V)
TO PW

CN4005
REG 12V
GND (12V)
Mc - SERVO
Mc - D
Mc - FG
Mc - FG
TO MC

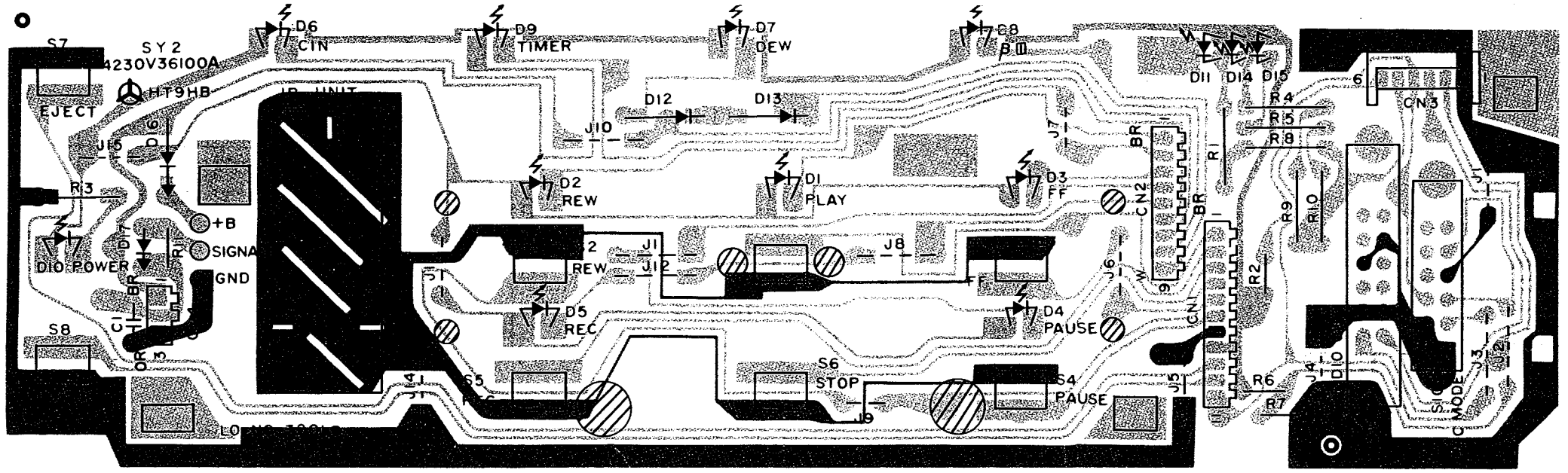
CN4006
MH-SERVO
REG 12V
GND
REG 12V
TO MH

CN4001 / CN4004 / CN4005 / CN4006 → TO SY

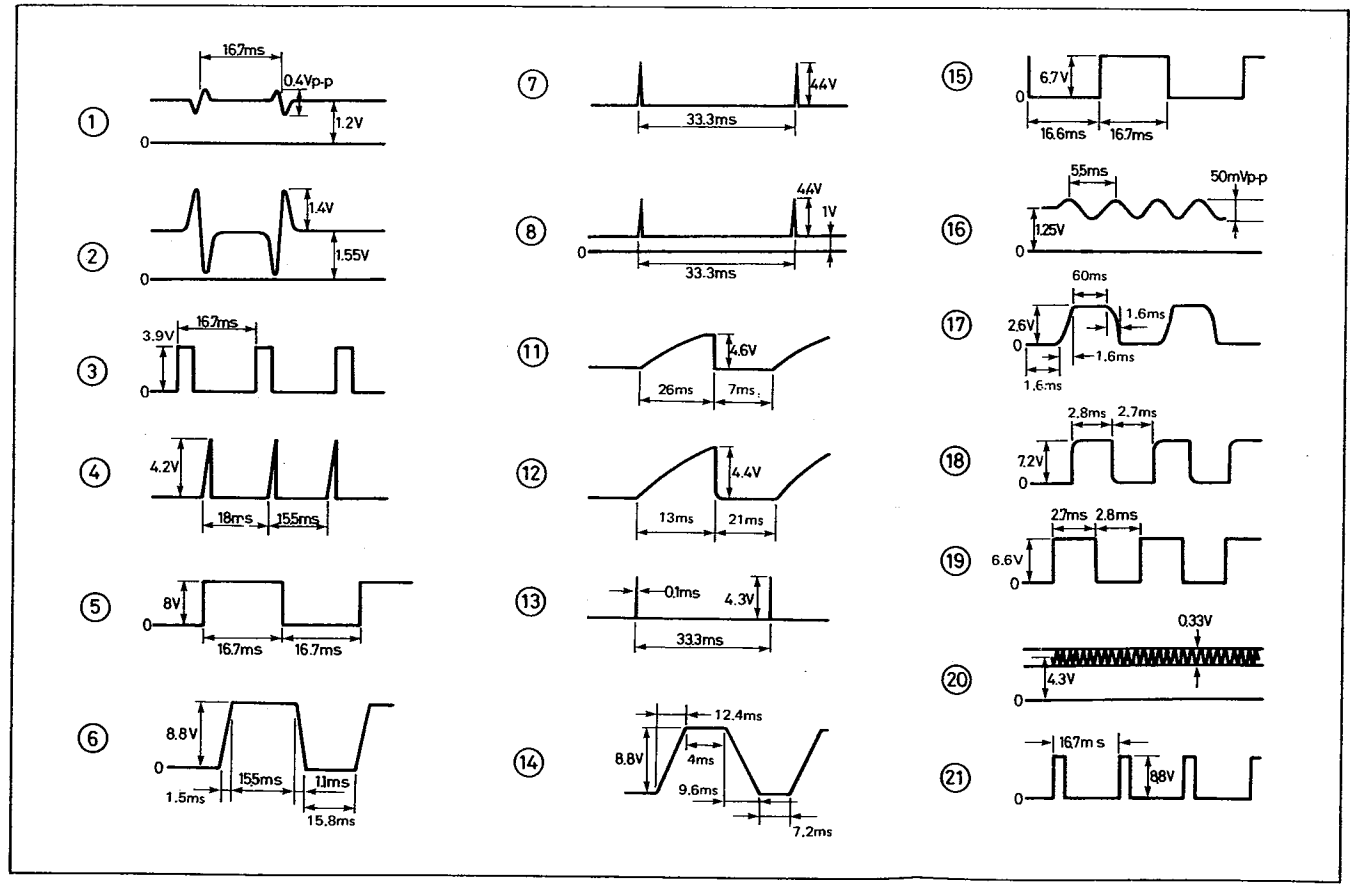
MH - ON
Mc - ON
F - CUE
RVW
STILL
REC+PAUSE
βIII LED
Mc - D
Mc - BR
AUDIO ONLY

Voltage PLAY Mode

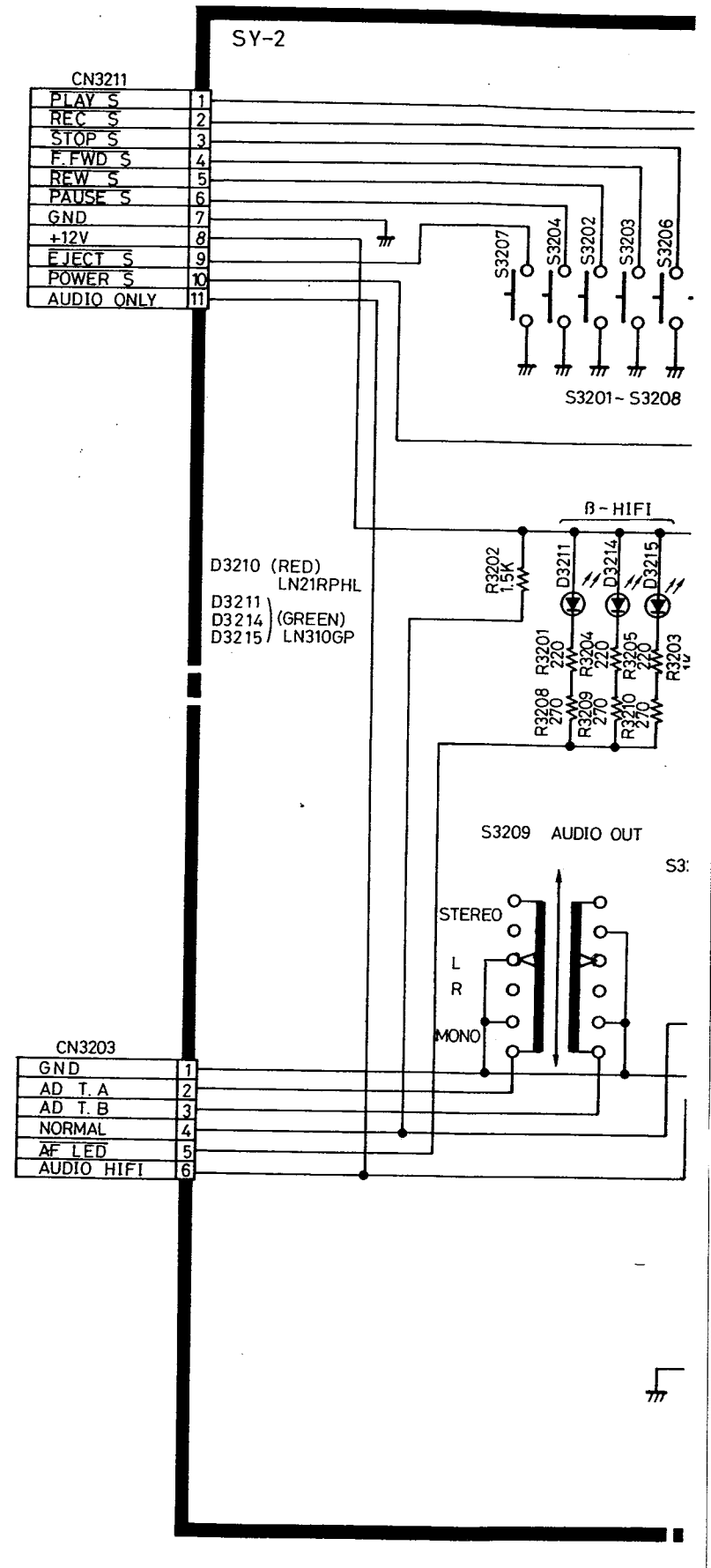
P.C.B. SY-2 OPERATION KEY-BOARD SWITCH



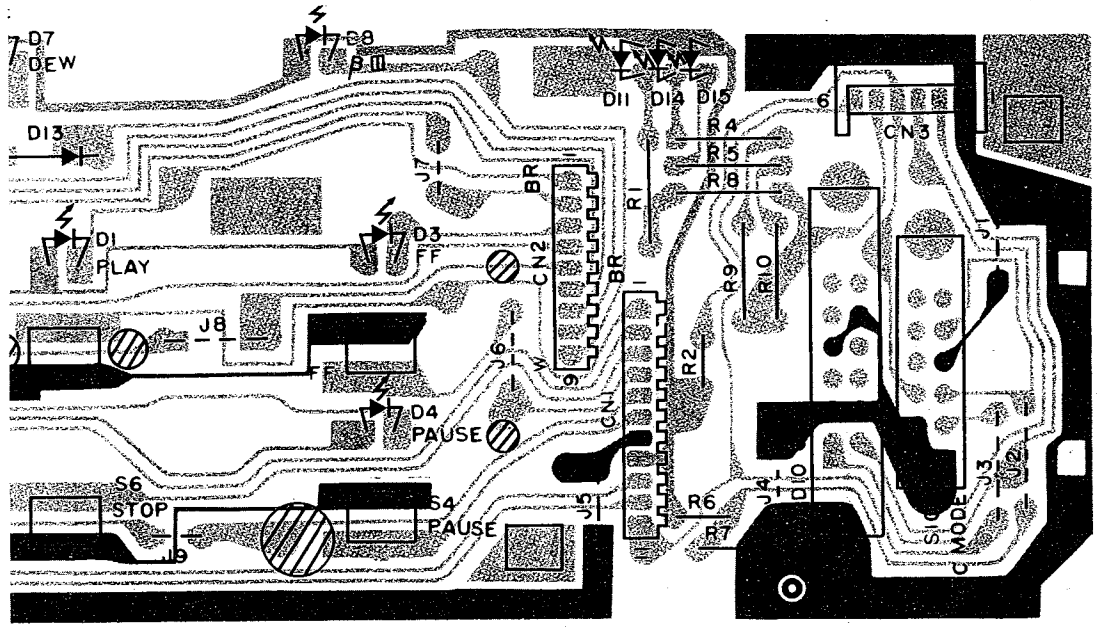
WAVEFORM OF SY-1 (SERVO)



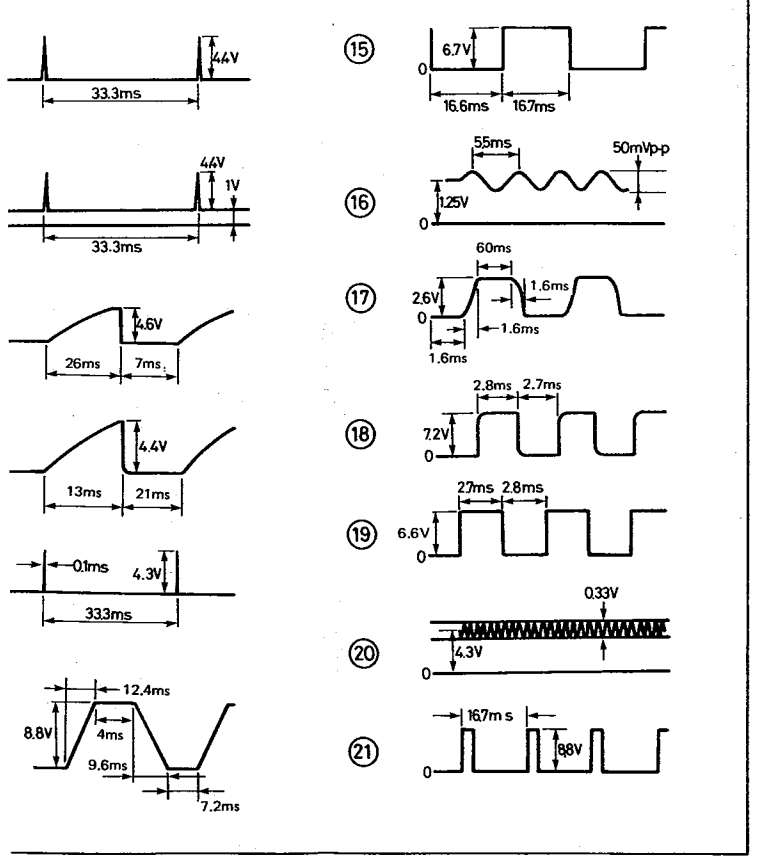
P.C.B. SY-2 OPERATION KE



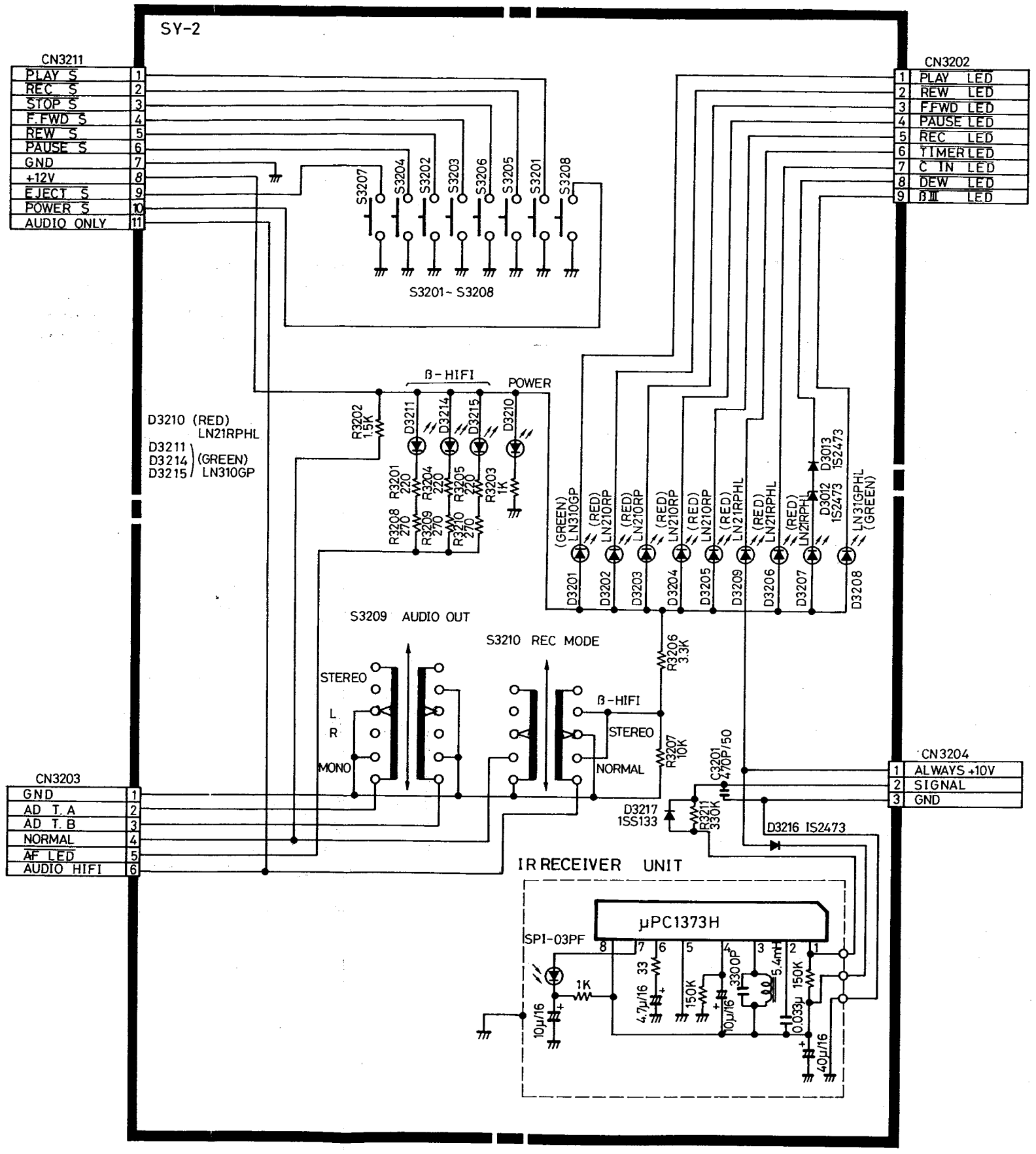
TION KEY-BOARD SWITCH



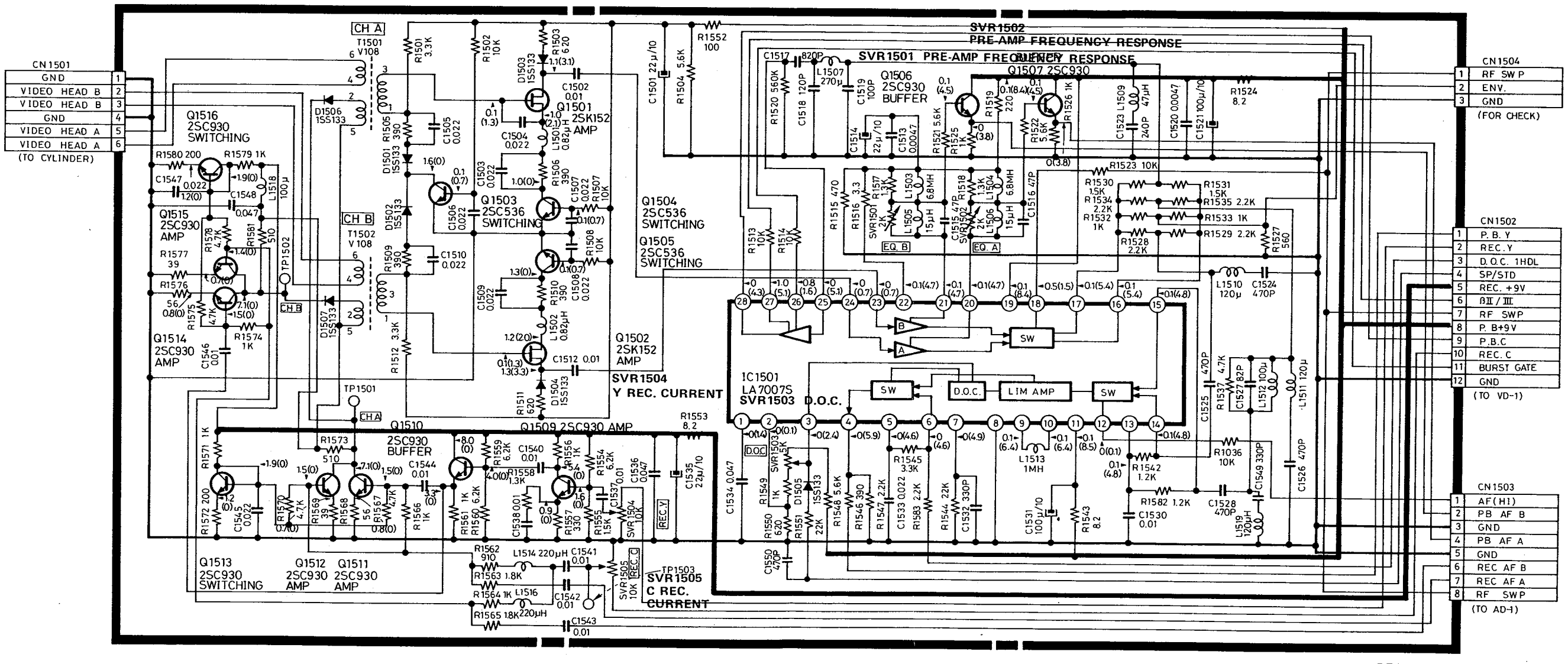
RM OF SY-1 (SERVO)



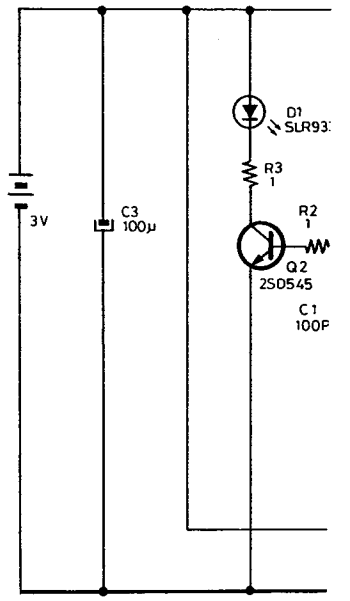
P.C.B. SY-2 OPERATION KEY-BOARD SWITCH CIRCUIT



P.C.B. VP-1 VIDEO PRE-AMP CIRCUIT

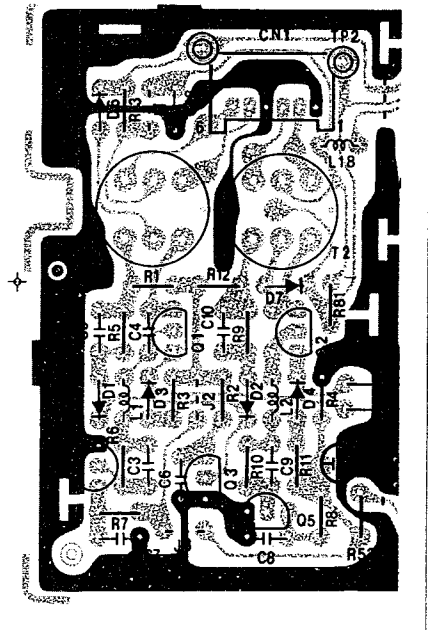


Voltage REC (PLAY) Mode

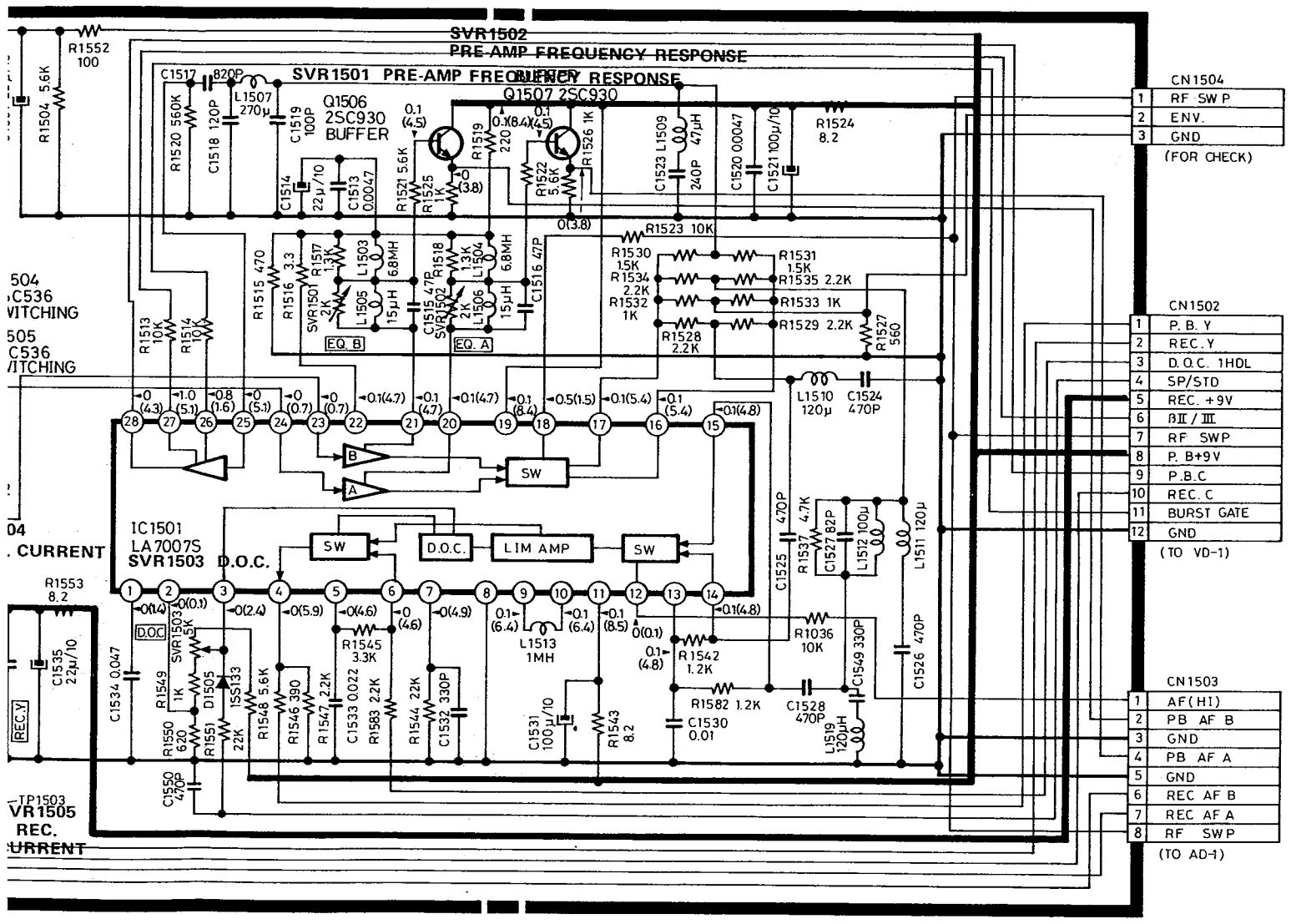


M4U VP-1

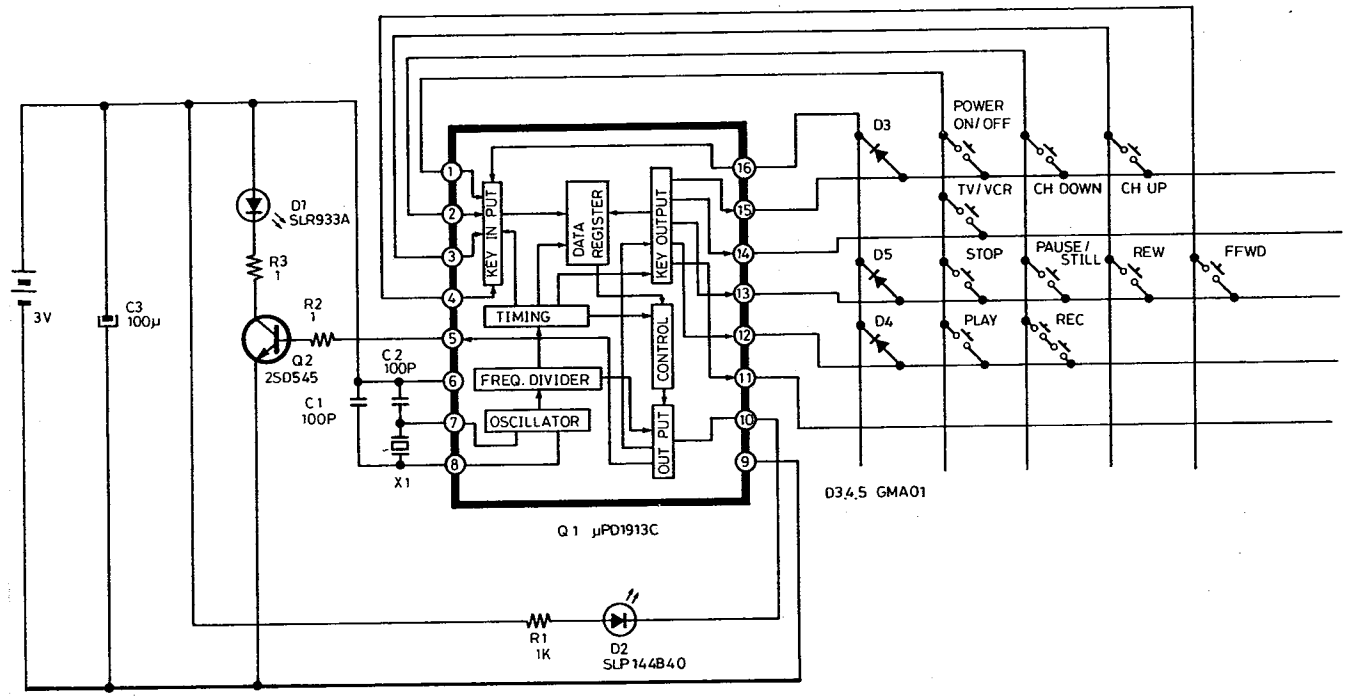
Transistor	Q4	Q1	Q3	Q5	Q2
Diode	D6	D1	D3	D2	D4
ADJ Parts					



.B. VP-1 VIDEO PRE-AMP CIRCUIT



IR REMOTE CONTROL UNIT CIRCUIT

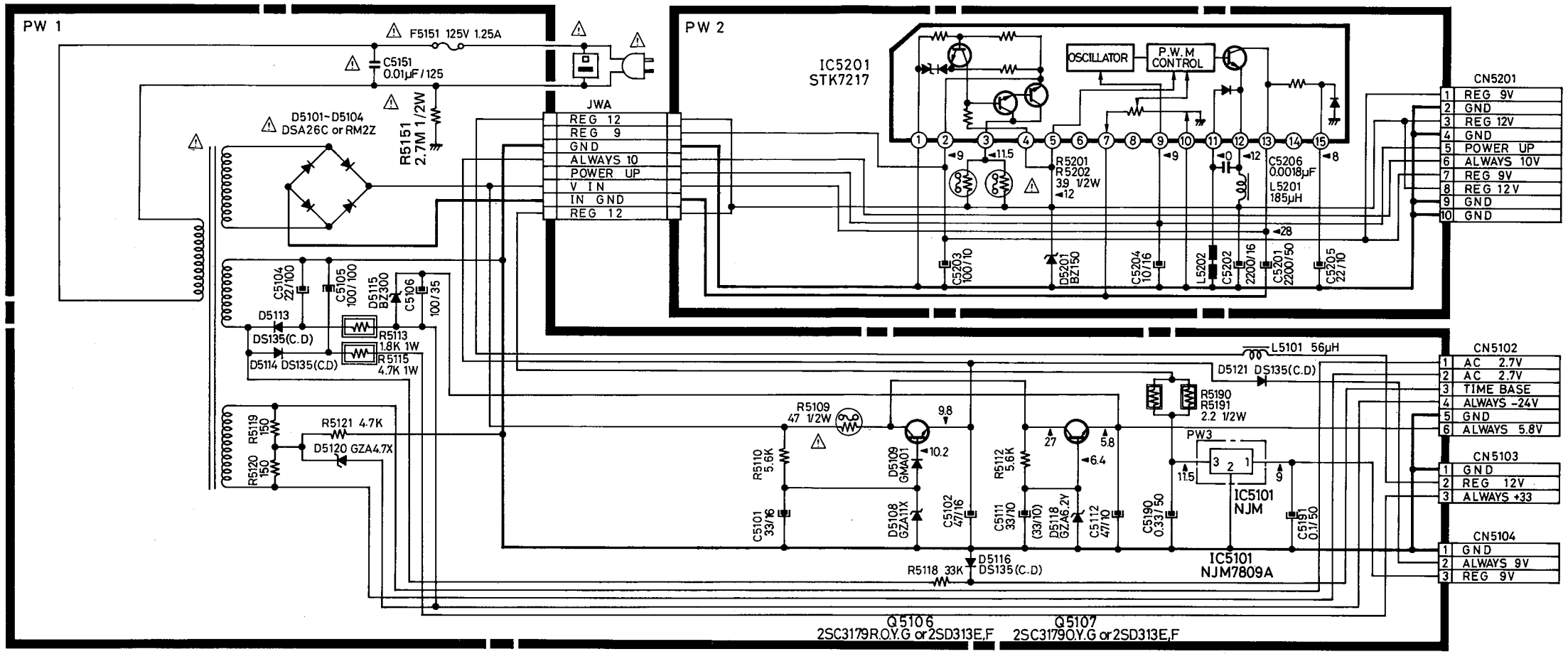


P.C.B. VP-1 VIDEO PRE-AMP

M4U VP-1

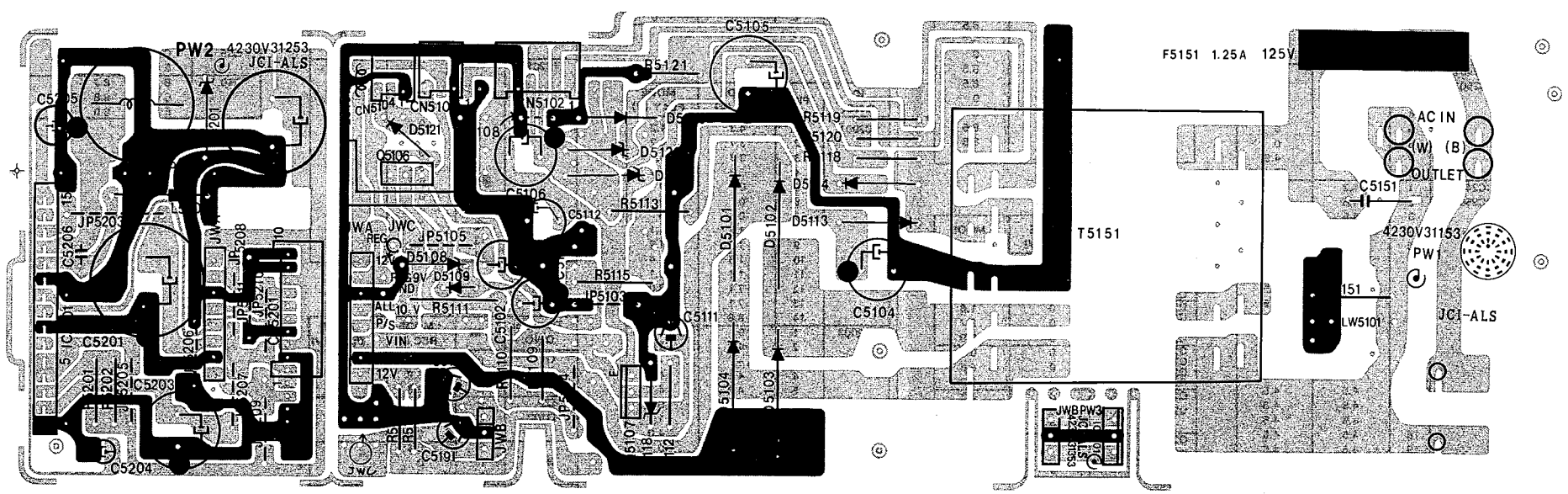
| | | |

P.C.B. PW-1, 2, 3 POWER SUPPLY CIRCUIT



Voltage EE Mode

P.C.B. PW-1, 2, 3 POWER SUPPLY



VCR7200

Voltage of AD-1 CIRCUIT

IC Q NO.	PIN	MODE REC (V)	MODE PLAY (V)
IC2200	1	0	3.0
IC2201	2	0	3.4
IC2300	3	0	3.4
IC2301	4	0	0
	5	0	6.0
	6	0	8.7
	7	0	5.2
IC2202	1	0	8.7
IC2302	2	0	5.4
	3	0	–
	4	0	4.8
	5	0	0
	6	0	0
	7	0	5.4
	8	0	0
IC2203	1	0	3.2
IC2303	2	0	1.7
	3	0	3.3
	4	0	0
	5	0	0.4
	6	0	0
	7	0	0.4
	8	0	3.2
	9	0	6.3
	10	0	4.6
	11	0	3.3
	12	0	8.7
	13	0	5.6
	14	0	3.3
IC2204	1	0	2.1
IC2304	2	0	4.9
	3	0	4.9
	4	0	4.9
	5	0	4.9
	6	0	1.8
	7	0	0
	8	0	1.9
	9	0	1.6
	10	0	0
	11	0	0
	12	0	0
	13	0	1.4
	14	0	4.9
IC2205	1	0	5.9
IC2305	2	0	5.9
	3	0	5.9
	4	0	0
	5	0	5.9
	6	0	5.9
	7	0	5.9
	8	0	8.7
IC2206	1	8.0	8.0
	2	4.4	4.4
	3	4.4	4.4
	4	4.4	4.4
	5	0	0
	6	4.4	4.4
	7	4.4	4.4
	8	4.4	4.4
	9	8.0	8.0
IC2400	1	7.2	7.2
IC2500	2	4.4	4.4
	3	4.4	4.4
	4	3.7	3.7
	5	0	0
	6	0	0
	7	4.4	4.4
	8	0	0
IC2401	1	8.0	8.0
IC2501	2	4.9	4.9
	3	0	0
	4	4.3	4.3
	5	0	0
	6	0	0
	7	4.9	4.9
	8	0	0
IC2402	1	1.2	1.2
IC2502	2	4.5	4.5
	3	4.5	4.5
	4	4.5	4.5
	5	4.5	5.5
	6	4.5	4.5
	7	4.5	4.5
	8	4.5	4.5
	9	4.5	4.5
	10	4.5	4.5
	11	4.5	4.5
	12	8.0	8.0
	13	0	0
	14	4.5	4.5
	15	4.5	4.5
	16	4.5	4.5
	17	4.5	4.5
	18	4.5	4.5
	19	4.5	4.5
	20	4.5	4.5
	21	3.9	3.9
	22	4.5	4.5
	23	4.5	4.5
	24	4.5	4.5

IC Q NO.	PIN	MODE REC (V)	MODE PLAY (V)
IC2403	1	4.5	4.5
	2	4.5	4.5
	3	4.5	4.5
	4	0	0
	5	4.5	4.5
	6	4.5	4.5
	7	4.5	4.5
	8	8.0	8.0
IC2405	1	4.9	4.9
IC2505	2	2.7	2.7
	3	1.6	1.6
	4	0	0
	5	0	0
	6	2.8	2.8
	7	2.4	2.4
	8	0	0
	9	2.2	2.2
	10	4.2	4.2
	11	4.2	4.2
	12	4.2	4.2
	13	0	0
	14	2.8	2.8
	15	1.6	1.6
	16	2.8	2.8
IC2600	1	8.0	8.0
	2	0	0
	3	4.9	4.9
IC2601	1	2.3	2.3
	2	1.6	1.6
	3	0	0
	4	4.9	4.9
	5	2.4	2.4
	6	2.4	2.4
	7	2.4	2.4
IC2602	1	0	8.7
	2	0	5.4
	3	0	–
	4	0	4.7
	5	0	0
	6	0	0
	7	0	5.4
	8	0	0
IC2603	1	0	1.4
	2	0	1.4
	3	0	0
	4	0	5.7
	5	0	8.7
IC2604	1	8.0	8.0
	2	8.0	0
	3	0	7.7
	4	6.2	8.0
	5	0	–
	6	0	–
	7	0	0
	8	0	0
	9	0	0
	10	0	0
	11	8.0	–
	12	0	–
	13	8.0	8.0
	14	8.0	8.0
IC2605	1	8.0	0
	2	8.0	0
	3	0	8.0
	4	8.0	8.0
	5	0	8.5
	6	7.7	–
	7	0	0
	8	0	8.5
	9	0	8.5
	10	8.0	0
	11	8.0	0
	12	0	8.5
	13	0	8.5
	14	8.0	8.0

Transistor Q NO.	PIN	MODE REC (V)	MODE PLAY (V)
Q2201	B	0	2.9
Q2202	C	0	6.6
Q2301	E	0	2.2
Q2302			
Q2203	B	0	1.6
Q2204	C	0	8.7
Q2303	E	0	0.9
Q2304			
Q2205	B	0	0.9
Q2206	C	0	5.6
Q2305	E	0	0.2
Q2306			
Q2207	B	0	1.3
Q2307	C	0	4.9
	E	0	0.7
Q2208	B	0	0.4
Q2308	C	0	2.1
	E	0	0
Q2209	B	0	1.5
Q2309	C	0	8.7
	E	0	0.8
Q2211	D	0	5.9
Q2311	G	0	5.6
	S	0	5.9
Q2400	B	2.4	2.4
Q2500	C	8.0	8.0
	E	3.4	3.4

IC Q NO.	PIN	MODE REC (V)	MODE PLAY (V)
Q2401	B	4.4	4.4
Q2501	C	0	0
	E	3.4	3.4
Q2402	B	3.3	3.3
Q2502	C	8.0	8.0
	E	2.6	2.6
Q2403	B	1.4	0
Q2503	C	6.7	0
	E	0.7	0
Q2404	B	1.4	0
Q2504	C	6.7	0
	E	0.7	0
Q2405	B	6.7	0
Q2505	C	8.9	0
	E	6.0	0
Q2406	D	4.5	4.5
Q2506	G	4.5	0.5
	S	4.5	4.5
Q2407	B	0.6	0
Q2507	C	0	0
	E	0	0
Q2600	B	2.7	2.7
	C	4.9	4.9
	E	2.0	2.0
Q2601	B	2.7	2.7
	C	4.9	4.9
	E	2.0	2.0
Q2602	B	0	4.2
	C	0	5.2
	E	0	3.6
Q2603	B	0	4.4
	C	0	8.7
	E	0	3.7
Q2604	B	0	5.2
	C	0	8.7
	E	0	6.9
Q2605	B	0	6.9
	C	0	8.2
	E	0	6.6
Q2606	B	0	5.6
	C	0	8.7
	E	0	6.6
Q2607	B	0	8.7
	C	0	0
	E	0	8.7
Q2608	B	0	0
	C	0	8.5
	E	0	0
Q2609	B	–	–
	C	–	–
	E	0	0
Q2610	B	0.6	0
	C	0	0
	E	0	0
Q2611	B	0.6	0
	C	0	8.6
	E	0	0
Q2612	B	0.6	0.6
	C	0	0
	E	0	0
Q2613	B	2.9	0
	C	8.8	0
	E	8.9	0
Q2614	B	0.7	0
	C	0	0
	E	0	0

IC Q NO.	PIN	MODE REC (V)	MODE PLAY (V)
IC2001	1	4.3	4.2
	2	3.7	4.2
	3	3.7	4.2
	4	2.2	4.1
	5	0	0
	6	0	0
	7	0	0
	8	1.8	4.1
	9	1.3	4.2
	10	1.3	1.4
	11	1.1	4.1
	12	7.1	8.0
	13	7.1	8.0
	14	8.8	8.4
IC2003	1	0	0
	2	4.2	4.0
	3	–	–
	4	4.1	4.0
	5	4.2	4.2
	6	0	0
	7	1.2	1.2
	8	4.2	4.0
	9	0	0
	10	4.2	4.0
	11	4.1	4.0
	12	–	–
	13	4.2	4.0
	14	8.4	8.1

Transistors Q NO.	PIN	MODE REC (V)	MODE PLAY (V)
IC2004	1	8.6	8.2
	2	4.4	4.2
	3	4.4	4.2
	4	4.3	4.0
	5	0	0
	6	4.2	4.1
	7	4.3	4.1
	8	4.3	4.2
	9	–	–
IC2005	1	4.4	4.2
	2	4.4	4.2
	3	4.4	4.2
	4	4.4	4.2
	5	0	0
	6	0	0
	7	0	0
	8	4.4	4.2
	9	4.4	4.2
	10	4.4	4.2
	11	4.4	4.2
	12	7.2	7.0
	13	7.2	7.0
	14	8.8	8.4
IC2007	1	1.2	1.2
	2	0	0.4
	3	0	0
	4	3.5	3.3
	5	4.6	0
	6	0	0
	7	7.7	7.4
	8	0	0.1
	9	5.1	5.1
	10	3.9	0
	11	0.1	0.1
	12	0.4	0
	13	0.8	0
	14	1.4	0
	15	3.2	3.1
	16	0	1.0
	17	0	8.3
	18	8.0	7.7
	19	0	0
	20	0.6	0
IC2008	1	4.0	3.6
	2	4.0	3.6
	3	4.0	3.5
	4	4.0	3.6
	5	–	0
	6	0.7	0
	7	0	0
	8	0	0
	9	0	0
	10	0	0
	11	4.0	3.6
	12	4.0	3.4
	13	4.0	3.4
	14	4.0	3.6
	15	4.0	3.6
	16	8.0	7.7
IC2009	1	0.3	0
	2	0.2	0
	3	0.3	3.7
	4	0	0
	5	0	0
	6	0.1	0
	7	0.1	0
	8	0.7	0
	9	6.4	5.1
IC2010	1	7.3	7.8
	2	6.7	5.6
	3	0	0
	4	0	0
	5	0	0
	6	0	5.3
	7	0	0
	8	5.2	0
	9	6.6	0
	10	0	0
	11	0	0
	12	0	0.4
	13	0	0
	14	8.8	8.4

Transistor Q NO.	PIN	MODE REC (V)	MODE PLAY (V)
Q1	B	3.9	
Q101	C	8.8	
	E	3.3	
Q2	B	0.9	
Q102	C	5.5	
	E	0.8	
Q4	B	0.8	
	C	0	
	E	0	
Q5	B	8.0	
	C		
	E	8.8	
Q6	B	0.7	
	C	0.1	
	E	0	
Q8	B	7.8	
	C	–35	
	E	8.1	

Transistor Q NO.	PIN	MODE REC (V)	MODE PLAY (V)
Q9	B	–35	
	C	–37	
	E	–24	
Q10	B	–35	
	C	0	
	E	–24	
Q11	B	0	
	C	0	
	E	0	
Q12	B	0	
	C	0.9	
	E	0	
Q13	B	0.3	
	C	7.6	
	E	0.1	
Q15	B	0	
	C	8.7	
	E	0	
Q16	B	8.2	
	C	0	
	E	0	
Q17	B	–0.5	
	C	0	
	E	0	
Q18	B	–0.5	
	C	0	
	E	0	
Q20	B	6.6	
	C	0	
	E	8.8	
Q21	B		
	C		
	E		
Q22	B	8.7	
	C	0	
	E	0	
Q23	B	0	
	C	0	
	E	0	
Q24	B	0	
	C	0	
	E	0	
Q25	B	0	
	C	0	
	E	0	
Q26	B	8.7	
	C	0	
	E	0	
Q27	B	8.8	
	C	0	
	E	0	
Q28	B	6.4	
	C	0	
	E	0	
Q29	G	3.6	
	S	3.6	
	D	4.3	
Q31	B	7.1	
	C	0	
	E	0	
Q32	B	0	
	C	6.7	
	E	0	
Q33	B	7.1	
	C	0	
	E	8	
Q35	B	0.7	
	C	0.1	
	E	0	
Q40	B	8.7	
	C	8.8	
	E	8.0	